SEPTEMBER, 1947

Industrial FINISHING

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Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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Contents of This Issue

Random Comment on the Industrial Scene 8
Cleaning, Painting and Drying Setup for Power Scooters 34
Production Painting of New Motor Coaches 42
Cleaning Metal for Painting 55
Decorating Merchandise Displays 59
Finishing Metal Caskets 75
Why Some Wood Finishes Have Poor Adhesion 80
Some Spraying Setups You Want to Avoid 93
Letters from Readers 98
Questions and Answers 102
Materials; Supplies; Equipment 110
Booklets; Catalogs; Circulars 122
Editorial 126
"Classified Advertising" Section 137
Advertisers Index 140

Klem Chemicals Expands 41
New Monsanto Office in Philadelphia 41
National Paint Dictionary; New Edition Ready 52
Burdett Promotes Two Key Men 54
J. H. Chopa Manages Chicago Divn. of Berry Bros. 54
Wyandotte Adds to Service Forces 54
Solvents—Safe and Dangerous 66
Where and Why Finish Fails 68
Hilliard New Tech. Dir. for Clinton Co. 70
Pine Tree Wrinkle 70
Check Operation of Ventilation Setup 78
Wrong Caption Under Cut 78
Sherwin-Williams Opens Office in Grand Rapids, Mich. 86
Sound Movie Shows Care of Airbrush 86
Plastics Glow in Dark 86
Interchemical Advances C. F. Kahnhauser 88
Marking and Imprint Devices 100
Spray Gun Nozzles 119
Interchemical Corp. Accents Technical Sales Training 124
John F. Ganaman Joins Wabash Products Co. 136

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Industrial Expansion. The SEC (Securities & Exchange Commission) states that industry expects to spend 3 billion 800 million dollars on new plants and equipment before next January. The information is based on a survey. It is also revealed that one billion will be spent for improving old buildings and equipment.

Competition is becoming keener, and probably it will be sharper as time goes on. Industry, like the man in a row boat, cannot stand still. It will either go forward through intelligent, patient effort, or it will drift backward.

* * *

International Trade Association (ITA) was formed this year as a non-profit association to aid "small" businessmen who wish to extend their business overseas and thus increase the sale of American goods around the world. H. Fred Willkie, brother of the late Wendell Willkie and Vice President in charge of production for Joseph E. Seagram & Sons, Louisville, Ky., is Chairman of the Board of ITA; Aron L. Ford, former Representative is President. The Association is setting up Councils in all countries now open to American business in order to facilitate reciprocal world-wide movement of goods and cultural ideas. Address of ITA is Munsey Bldg., Washington, D. C. The Public Relations Division is at 27 E. 38th St., New York 16, N. Y.

* * *

More Freight Cars. There should be a definite improvement in freight shipments in the last quarter of this year—if a steady increase in deliveries of freight and refrigerator cars means anything. One car company is rolling 27 box cars and 12 refrigerator cars out on the delivery track every eight hours.

* * *

Highway Trucks and trailers are becoming increasingly important in the delivery of materials, parts and products to and from factories. During the war years, millions of persons entering factories for the first time learned of the speed and precision with which trucks and trailers kept parts and materials flowing to and from the plants.

Industrial decentralization brought thousands of new industries into isolated areas where trucks and busses offered the only means of transportation. People in these areas, as well as in principal centers, saw how motor transport linked these plants with others hundreds of miles apart, on daily or even hourly schedules.

* * *

Air Express Up 33%. International air express shipments marked up a gain of over 33% for the first six months of this year. There were 294,558 shipments dispatched to and from foreign cities during the half year.

Miami, Florida, led the international airports in June in volume

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of international air express handled, with 25,324 shipments. Following in order were New York, San Francisco, Brownsville, Tex., New Orleans, San Antonio, Los Angeles, Houston and Seattle.

* * *

Motors Easier to Get. A steady improvement in delivery dates of electric motors, and elimination of "black market" prices on motors will be good news to industry. It is also an indication that the return to a buyers market is extending itself into durable goods lines.

* * *

New Furniture Finishes. The latest innovation for furniture manufacturers, according to Mr. Arthur W. Steudel, president of The Sherwin-Williams Co., is a baked varnish system that actually reduces the number of finishing operations, decreases finishing time and consumes 30% to 50% less finishing material than is required with ordinary lacquer or varnish. These synthetic varnishes have a degree of resistance to acids and moisture that is remarkable, yet the finish has rare fullness and beauty.

* * *

Use Fuel Wisely. In every community much publicity is given to elimination of smoke. There is more to it than complaints by J. Q. Public and politics. Joseph Harrington, research engineer and advisor to Chicago's smoke inspection department declares that many large plants actually are throwing away 5% to 10% of the money spent for coal in the smoke that goes up the chimney, while smaller establishments may be losing as much as 30%.

Heavy smoke indicates unburned coal and gases. Many plants could

easily eliminate the smoke nuisance and save money through a few changes in furnace construction to assure more complete combustion of the coal, which now is so high priced.

* * *

Oil from Shale. Colorado's lake bottoms contain shale beds 500-ft. thick. It is estimated that oil from this shale will meet the needs of this country, at present rates of consumption for 60 years. Shale is mined like coal. The U. S. Bureau of Mines is operating a $2,000,000 pilot plant at Rifle, Colo., extracting oil from shale. It is said to average 15-gallons to the ton or 300 million barrels to the square mile.

* * *

Black Lost Big Sale. The wrong color for handles of flat irons lost a $250,000 South American sale. The loser used black handles on his irons, which have been found satisfactory for domestic trade, but his competitor used red handles, which had South American preferance. Similar considerations are involved in the finishing of goods destined for sale to various foreign countries, or to racial groups in this country, who seem to have inherited preferences for certain colors or color combinations.—N. P.V. & L.A.

* * *

Furniture Markets. News filtering through from the three summer furniture markets indicates slight improvement over the January shows.

The New York market reports a slight increase of buyers, compared with the same show of 1946, and increased purchases in case goods. Buyers were quality conscious and walked around with note book and rule for the first time

(Continued on page 88)

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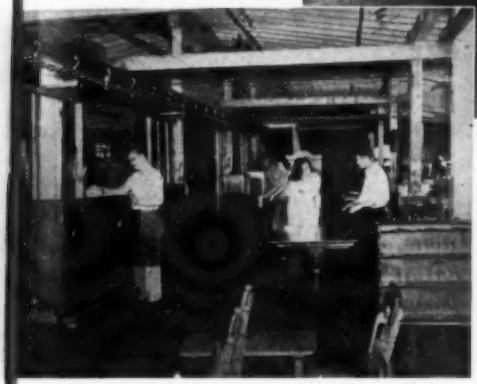
Three types of furniture



on one finishing conveyor!

MANUFACTURERS of diversified lines of furniture can obtain the same benefits from progressive type mass production conveyors as those who specialize in one type.

The operations of the cutting, progressive assembly, finishing and painting lines are progressive, based on the number of units to be produced; and the finishing operations; viz., the roughing-in, sealer, sanding and finishing coats are also progressive.

In a properly planned operation, no confusion results from a diversified line of production furniture, as each operator becomes thoroughly trained in his specific duty on the progressive production line. The use of properly designed conveyors can and has resulted in the economical production of diversified products.

The pictures represent progressive operations to final assembly and finishing of the product prior to crating. When your material flow has once reached progressive operation, your production will be increased, your quantity and quality improved, and your labor costs greatly reduced.

If interested, contact this office and our specialist in furniture manufacture will be available to you.

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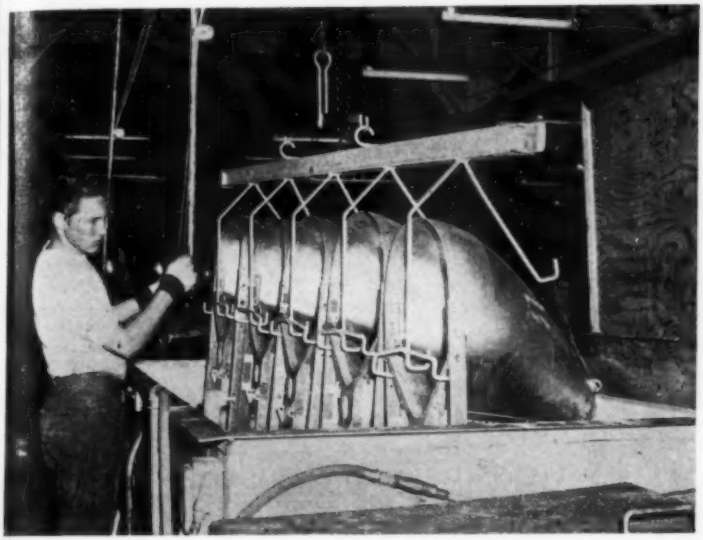
CLEANING, PAINTING AND DRYING SETUP FOR *Power Scooters*

By GILBERT C. CLOSE

"ALL WORK stations to be served by an overhead conveyor line," is one of the principles followed in laying out the combined metal cleaning, painting and paint-drying setup at a new Pomona, California, plant which makes Salsbury motor scooters. Everything in the finishing department is designed to turn out a quality job quickly, efficiently and with a minimum of manual effort.

The factory is scheduled to produce a deluxe line of motor scooters and factory turret trucks for material handling. Realizing how much abuse the protective coatings on their products would receive in service, the company decided to make use of equipment, methods and materials which would assure a quality finish.

Inasmuch as most of the parts for scooters and trucks are either machined or trimmed and fitted at



Lowering racked scooter bodies into vapor degreaser to clean them.

the factory, these parts enter the cleaning room coated with cutting oils and various rust preventives. To assure complete removal of these coatings a vapor degreaser was installed. It utilizes stabilized trichlorethylene solvent. An interesting feature of this installation is the method of handling parts in and out of the cleaning tank.

Material handling racks were designed which have overhead removable hangers about 8-ft. long. The underside of each hanger has hooks for hanging the parts, while the top side has two hooks for connecting it to overhead lifts and conveyors. After the parts in process have moved through the factory and arrived at the cleaning station, it is only necessary to attach an overhead lift to the rack hanger and lower the entire load into the cleaner at one time. This does away with any manual handling of the parts. After cleaning, the hanger is replaced on the portable rack and moved to the next station.

For cleaning batches of small parts loaded in wire baskets a special small size "ferris wheel" is provided in the upper part of the cleaning tank. The manual rotation of this ferris wheel (a pair of wheel spokes) lowers baskets of parts into the cleaning vapor, swings them through it, and lifts them out. The baskets are placed on and removed from the wheel by the same overhead traveling lift that handles rack hangers.

The only part of the production line that is not completely mechanized is the dip tank where parts are hand-dipped, then suspended on a circular overhead conveyor for

Looking down into the cleaning tank where a built-in ferris wheel is set to lower and lift wire baskets loaded with small metal parts to be cleaned.

draining. Automatic dipping would be difficult to arrange here because of the complex shape of many engine parts. As soon as the dipped parts have drained, they are transferred to the overhead conveyor line where they remain until they are completely dried and ready for final assembly.

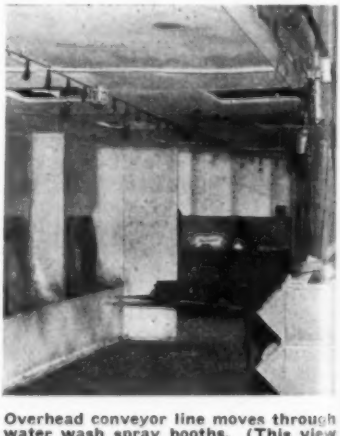
Infra-Red Drying Tunnels in Three Sections

After leaving the dip tank the main conveyor travels past three water wash spray booths where hand sprayed parts are added to the load. The conveyor then slants upward and moves through three sections of infra-red drying lamps. As the conveyor enters the first section of infra-red lamps, a small friction pulley on the hook from which parts are suspended engages a friction track. This causes the hanging parts to rotate slowly as they travel through the heat zones. As a result all painted surfaces are exposed to equal degrees of drying heat to give uniform drying.

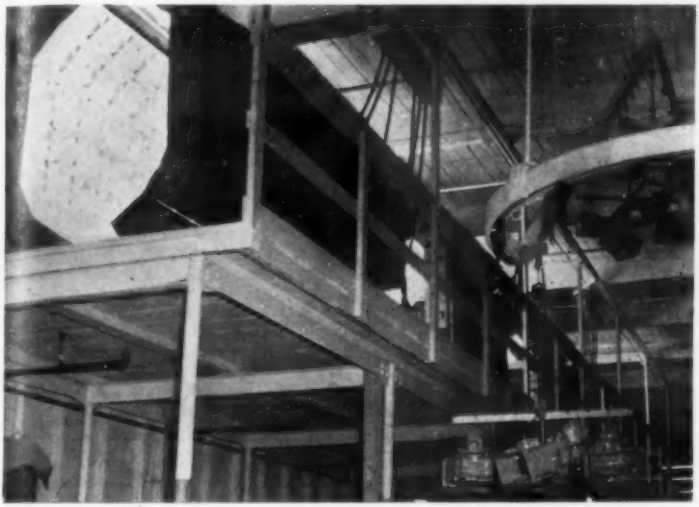
Leaving the infra-red drying tunnels, the conveyor slants downward again and parallels the final assembly area. Parts only need to be moved a short distance to reach their proper station on the final assembly line. Storage between painting and assembling operations is eliminated, and the speed of the paint line can be balanced to all of the requirements of final assembly.

The speed of the main conveyor may be varied as required. This is made possible by the arrangement of infra-red drying lamps in three sections, each of which can be cut in or out of service when desired to meet required drying speeds. This flexibility is a highly desirable factor in the stream-lined layout of the production system.

(Continued on page 41)



Overhead conveyor line moves through water wash spray booths. (This view was shot before major production operations were well under way.)



Looking upward to see three lengths of infra-red drying tunnel through which metal parts travel by conveyor to quickly dry the paint coatings.

Efficiency, Speed and Flexibility of System

The overall picture of the new Salsbury plant is one of efficiency, speed and extreme flexibility. In fact the production line throughout the plant is a small scale duplicate of what is found in Detroit's automobile factories. There are no large store rooms in which parts lie and gather dust. From receiving to inspection and then directly into production—this is the routine accorded most incoming parts. Parts that come from the machine shop, sheet metal department, and welding room, merge in a single area from which they are routed to the painting line or, in the case of certain engine parts, directly to assembly. This is the type of production and finishing that will fare well in the coming competitive era!

Klem Chemicals Expands

The incorporation of Klem Chemical Works with a new name, "Klem Chemicals Inc.," is the first step in expansion plans necessary to take care of increased demands for Klem Chemicals and industrial cleaners. Plant expansion is already underway and when completed will provide more than double the present manufacturing capacity, as well as faster and more efficient delivery.

General offices of the firm remain at the plant which is located at 14401 Lanson Ave., Dearborn, Mich. Sales offices and warehouse stocks are now maintained in many of the principal cities of the east and middle west. Expansion plans call for additional offices in practically all major manufacturing centers of the nation.

New Monsanto Office in Philadelphia

Monsanto Chemical Co. has opened a new office in Philadelphia, Penna. in the Widener Bldg. at Juniper and Chestnut Sts. It will handle all Monsanto sales, with emphasis on organic, psosphate, and Merrimac Division products.

Finished motor coaches ready to be mounted on wheels for their final test.

Production Painting of New Motor Coaches

AN IMPORTANT feature of the new line of motor coaches developed by Twin Coach Co. within the last two years is the attractive finishes. These include bonded protective coatings of zinc chromate and brilliant high-luster lacquers and enamels, colored according to customers' specifications. These colors contrast effectively with the satin-finished aluminum "belts" and other aluminum parts around the coaches. The aluminum shows to good advantage because of treatment by the alumiliting process.

Durable Attractive Coatings—and Easy to Repaint

The present type of coach finishing, plant officials declare, makes for simplified maintenance of the coach, which is exposed to every known kind of weather condition, plus dust, grit and grime. By having colors separated into clean-cut panels, re-painting is reduced to a minimum of effort, time and expense. And, of course, clean attractive colors induce more traveling by coaches, hence increased transportation profits.

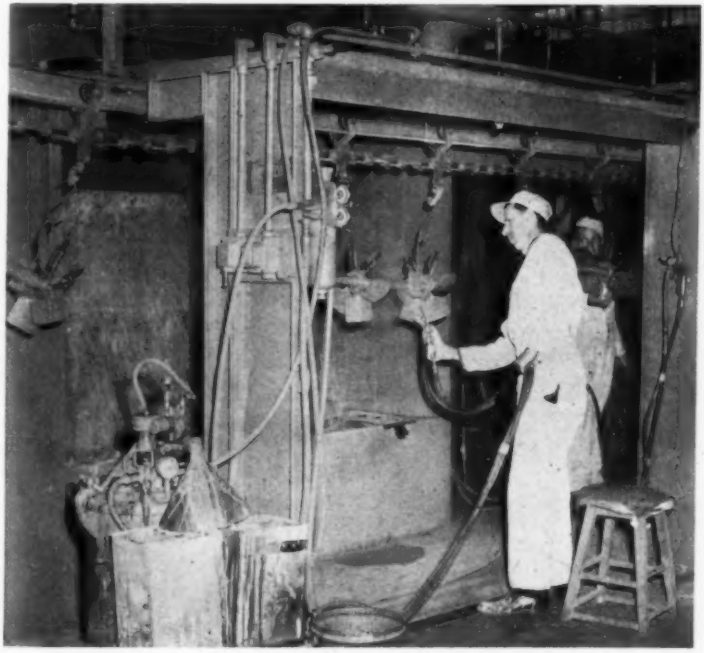
By WALTER RUDOLPH

Plants in Buffalo, N. Y., and Kent, Ohio, have been expanded and streamlined in operation, including conveyorization of finishing operations, to enable Twin Coach to increase its annual potential coach production. As of March, 1947, the company's backlog of unfilled orders was approximately $35,000,000 for urban coaches. Scheduled for delivery this year are approximately $30,000,000 worth of coaches.

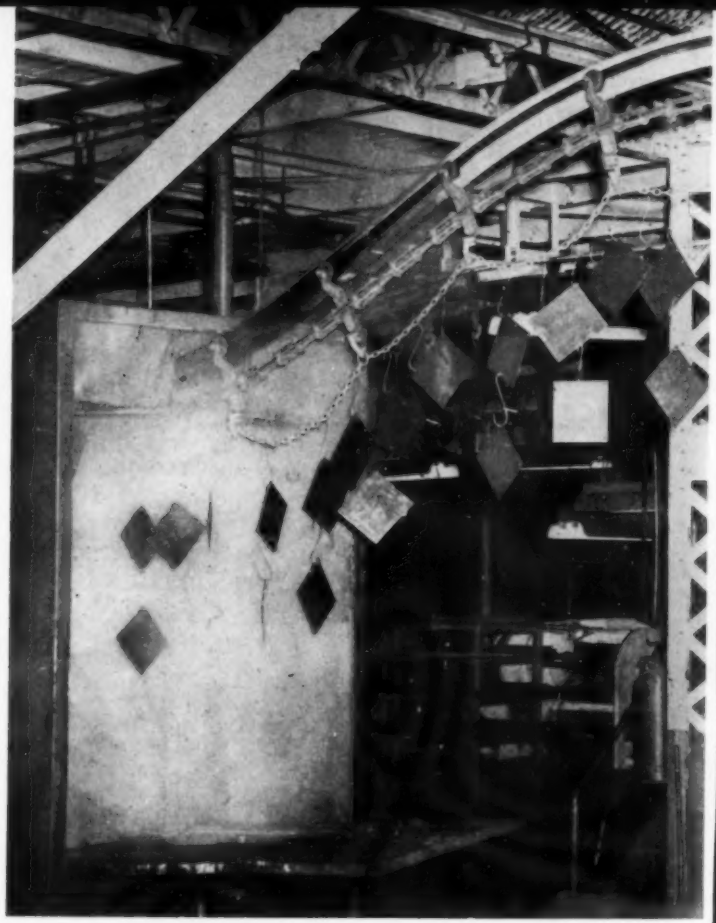
This article will deal with finishing operations at Kent. In this plant alone, floor space has been increased from 180,000 to approximately 500,000-sq. ft. As production has increased, unit costs have decreased because of efficient planning and tooling. Aluminum has been increasingly added in fabrication processes, until today it constitutes about 98% of the structural material in coach bodies. Weight savings combine with improved coach performance to make possible a 40-passenger coach with lower operating cost than a prewar 30-passenger coach.

Fabricated Parts Are Hung from Overhead Conveyor

Fabricated parts are moved by hand trucks and Clark gasoline jitneys to the loading zone of the overhead finishing conveyor. About 500-ft. of this overhead conveyor is required for the efficient flow of many parts from fabrication machinery, through finishing operations, to sub-assembly storage or "banks" near the final assembly line. Then, when completely assembled, coaches approach the end of these lines, final finishing operations proceed as the coaches



These workmen are spraying fan shaft assemblies in a 16-ft. booth for priming. Grey chassis enamel is used on all parts below the coach floor level.

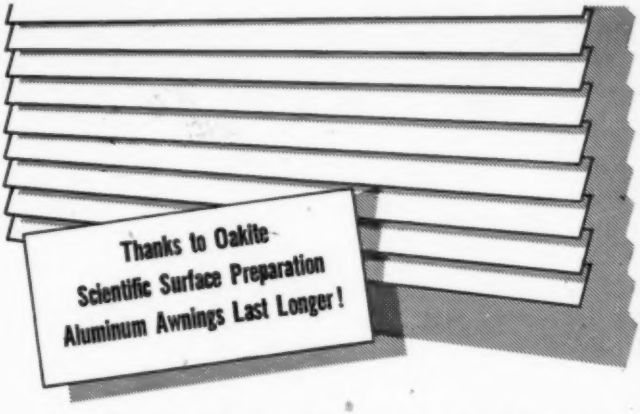


Small pieces are hung by wire hooks from chain loops, as shown here. At left is entrance to phosphoric acid bath for both aluminum and steel parts.

move along on special sets of wheels and tracks sunk in the factory floor.

Steel wire hooks are used to hang parts on the overhead conveyor. Small parts are "ganged up" in a shorter distance on the conveyor through the use of chain loops strung between the regular conveyor hooks for close spacing of pieces hanging by wire hooks. Pieces with holes are hooked through and additional pieces are hung underneath. The conveyor line moves about 10-ft. a minute.

The wire hooks must be cleaned from time to time. A conveyor man, between his regular operations, sorts out hooks from the plentiful supply, throwing those with thick paint into metal baskets. These baskets of coated hooks



If you are preparing awnings or other aluminum products for painting, check with the Oakite Technical Service Representative near you. Oakite experience in the cleaning and conditioning of aluminum has been varied and successful . . . offers you an opportunity to improve paint grippage and save time in the pre-finishing of your product. Let Oakite materials and methods help step up your production . . . keep your costs low. Consult Oakite TODAY!

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Oakite Compound No. 36 . . . a phosphoric-acid treatment that retards undercoat corrosion, lends grip to paint

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Specialized Industrial Cleaning
MATERIALS • METHODS • SERVICE

Towels soaked in a special cleaner are used to wipe off finger marks, dirt smudges and any excess alumilastic sealer, before the final painting.

are dipped into a tank of caustic soda until the hooks are clean to the bare metal. Usually this requires up to 20 minutes. Hooks are then returned to the conveyor.

Effective Metal Cleaning Precedes Prime Coating

Both steel and aluminum parts are thoroughly cleaned in a hot bath which includes a dip in phosphoric acid solution, followed by a hot water rinse. The conveyor line rises again after the rinse and crosses about 20-ft. of floor space to enter and pass through an oven for drying at about 180° F.

From this oven pieces move along the line a short distance and turn into a set of 16-ft. spray booths which have water wash exhaust systems. Various types of spray guns are used, their selection depending upon the job at hand. Only two prime-coat colors are used—zinc chromate and chassis grey enamel, the latter being especially suited for parts below the coach floor line, whether aluminum or steel.

Twin Coach buys its priming paints from several manufacturers. The paint is received in 50-gallon drums and is mechanically agitated before being emptied into pressure tanks. In these it is continuously agitated while being used.

About 30-ft. from the spray booths (again elevated over the factory working area along an aisle leading to sub-assembly) painted pieces enter a 16-ft. infrared oven. Upon leaving it, the cooling pieces move about 100-ft. and are again brought to a working level for piling on trucks and delivery to the "banks" in sub-assembly sections of the plant.

(Continued on page 48)

*CHEMICALS to clean and prepare metal for painting

Sol-Klean . . . PHOSPHORIC ACID METAL CONDITIONERS

Prezaint . . . . MAKES PAINT STICK TO ZINC AND GALVANIZED

Industrosolv. SOLVENT EMULSIONS FOR SPRAY WASHING MACHINES

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Industro . . . . ALKALI CLEANERS AND AIR WASH COMPOUNDS

Sep-Cote . . . SPRAY BOOTH COATINGS

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SOL-KLEAN is used to prepare steel and aluminum for painting. Rust, oxides and oil are removed and corrosion producing agents are neutralized by it. Also, Sol-Klean etches the metal and gives it a thin phosphate coating.

For use one volume of Sol-Klean is diluted with 2 or 3 volumes of water. The resulting solution is usually brushed on the metal at room temperature. It adheres to the oily surface, penetrates the oil and mixes with it, and dissolves the rust. Then the Sol-Klean is removed together with the dissolved oil and rust by wiping with rags or flushing with water.

Metal may also be cleaned and treated by immersing it in hot Sol-Klean and rinsing it in water. Sol-Klean is non-inflammable and no noxious or corrosive fumes are evolved.

Sol-Klean is easy to use and can be made an integral part of your production line.

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Wipe-Cleaning of Bodies Before Final Painting

The next sequence of operations pertaining to finishing begins near the end of the coach assembly line. The first step involves cleaning the bodies before masking and final painting. It is understood that the coach is complete except for wheels and certain pieces of hardware. This cleaning is wholly manual labor. It is done by dipping a towel into a special liquid cleaner, wringing excess cleaner from the towel and wiping all surfaces.

Wiping with cleaner removes finger marks, dirt smudges and any excess alumilastic sealer that may show where metal has been joined to metal in the assembly work. This sealer must be applied during assembly to prevent corrosion at joints, and any excess material must be removed before painting. Twin Coach uses the Rex towel system for wiping cloths, paying rent and upkeep expenses for the towels and having them picked up weekly, cleaned and repaired or replaced.

Masking Operations and Careful Spot Priming

Masking is next in order. It is applied with ordinary 24-in. Kraft paper and 1¼-in. masking tape. Lights, windows, window molding and the 12-in. aluminum "belt" around the outside of the coach are some of the surfaces masked. It is interesting to note, in this connection, that standard aluminum masks have been fabricated with clamps for insertion in and over windows, and over the wide "belt." This was the work of C. A. Blair and associates at Twin Coach. The aluminum masks are clamped in these openings and on the belt, and masked around the edges.

Wide U-shaped pieces of aluminum, loosely riveted around the edges of the window clamps, are pushed over the panels around the window openings to hold these masks in place. The 12x36-in. aluminum panels for masking the "belt" are hung from wire clips that fit into drainage openings about a foot below the outside of each window. Thus windows and "belt" are kept clean of masking adhesive, while having substantial and easily removed masks that can be used over and over again, with periodical cleaning.

When this masking job is completed, the coach gets still another "going over" with cleaner to assure an absolutely clean surface for final painting. Visual inspection is then given prior to zinc chromate spot priming. All the parts assembled in the coach have gone through 13 work stations since being primed and stored in "banks" near the assembly line. There are bound to be places here and there where the priming has been scarred. These places, as well as others where aluminum rivets now show, are touched up in this spot priming stage.

This light spot priming, by spraying, sets in a few minutes and the coach is transferred to wheels and tracks by which it is moved at right angles from the assembly line through painting and baking stations. There are two sets of these, parallel to each other. Each set has two 45x16x16-ft. "rooms" that can be completely enclosed for painting or for baking, although both operations aren't done in either one.

Naturally the coach goes to the painting "room" first. The doors are closed and, under practically ideal working conditions, painters spray as many as three colors

An attractive corner of original James Mont design by Modern Mode Furniture Company, New York City

Inviting... and the "Finishing" Touch is Egyptian

When a finish of particular quality is desired it is natural to turn—as does Modern Mode Furniture Company—to Egyptian.

Whether your finish problem concerns graceful furniture, heavy machine tools, modern home appliances or whatever, you want more than mere surface protection...much more. Count on easy application, lasting good looks, enhanced salability, when the finish is Egyptian. Inquiry is invited.

THE EGYPTIAN LACQUER MANUFACTURING COMPANY

SPECIALIZED PRODUCTION FINISHES

P. O. BOX 444, NEWARK, N. J.

Here a workman is inserting a window mask, using wide U-clamps to hold it to the window frame. The edges of these metal masks are closed with tape. Below, an aluminum mask is shown on part of the "belt" around the outside.

simultaneously, depending upon the proper spacing of these colors. Again, this painting is done with water-wash exhausting on both sides of the working area, which is well-illuminated with vapor-proof lights.

It might be well to discuss here the paints used for these final coatings. Naturally, every customer wants his fleet of coaches painted with an individualistic selection of colors. He may want as many as seven distinct shades for one fleet. The customer sends samples of these colors to Twin Coach long before work is begun, and the colors are submitted to paint manufacturers for custom mixing and matching. *(To p. 52)*

Our favorite field report · "O. K. Everybody happy!"

When a foreman finisher puts a special problem up to us—we like it. Our laboratory assigns a technician to that job, and he stays with it. Naturally, when our field man finally reports, "Chalk up another satisfied customer"—we're tickled pink. That's our forte—to deliver any special finish for any special purpose! We've done it many times. Try us!

W. P. Fuller & Co., Industrial Finishes Division, San Francisco 19, California.

LEATHER—another special field where FULLER Finishes excel.

FULLER · Industrial · FINISHES

Products of FULLER-NASON *Research*

Paint department superintendent M. A. Chiochio handles this phase of the work himself, ordering the required quantity of each color for the amount of surface to be covered in the fleet under question. All paints used by Twin Coach have been proved through specific weather and chemical tests, such as exposure to salt air, rain, sunlight, wind, etc. Two types of paint are used—a low-baking enamel and synthetic lacquer which also bakes. An attempt is made to use principally lacquer on coach interiors.

The paint sets in a few minutes, and is unmasked. Then the coach moves a short distance into a baking oven. Both of this firm's ovens are gas-fired. Precision controls bring the temperature up to 180° F. where it is held for 20 minutes for lacquer finishes and 30 minutes for enamels. Then the doors are opened and this coach is moved to a central track between the sets of painting and baking "rooms," and masking is applied for the next one or two colors, as the case may be.

This procedure is repeated until each coach has its complete scale of colors, except for the lettering and numbers. All masking is now cleaned off and hardware and glass are wiped with rubbing compound for polishing. Touching up here and there is done manually with paint brushes. Lettering and numbers are painted on by highly skilled sign painters, or applied through the use of decalcomanias, according to customer preference. Then the coaches are moved to storage to await mounting of wheels and other accessories prior to final testing and shipment to customers throughout the country.

The painter unmasks a coach that has just received two final color coats.

National Paint Dictionary; New Edition Ready

The long-awaited revision of the "National Paint Dictionary" is now ready for distribution. In commenting on this new publication, Mr. Jeffrey R. Stewart, author of the book, says:

"In this new third edition, the scope has been considerably expanded to the extent that the writer has called upon two noted technologists for assistance. These are Eugene F. Hickson, Chief of the Paint, Varnish & Lacquer Section of the National Bureau of Standards and Dr. Raymond B. Seymour, Director of the Industrial Research Institute, University of Chattanooga, Tenn. The size of the book has been reduced to 6x9-in. to meet popular demand, and to facilitate its use in a standard library shelf. The number of pages has been increased from 216 to 704, and a type face has been used which provides maximum legibility.

"A major change in the policy of securing information for this edition, as contrasted with previous editions, has been effected. The writer, at the

Yes YOUR product has that ever-loving sales appeal when it's coated with a more attractive finish!

To put a BETTER finish on metal in LESS TIME, at LOWER cost, standardize on UNITED'S Lacquers, Enamels, Synthetics, Thinners and Special Coatings.

WANT PROOF?

Put YOUR metal finishing requirements up to US! We'll recommend the finish that will best suit your production needs — and send you a generous working sample—all without obligation on your part.

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UNITED LACQUER MFG. CORP.

LACQUERS
THINNERS
SYNTHETICS
METALLIZED FINISHES
SPECIAL COATINGS

expense of considerable time and effort has obtained a cross-section of the opinion of leading scientific and technical men in the industry. In other words, it is believed that the manufacturer or industrial consumer of any particular product is best qualified to suggest such a definition; furthermore, he is usually willing to release this information for the general welfare of the industry. The information, which was so unselfishly offered during the preparation of this volume, was confirmed by reference to other sources. For this reason, the writer has carried on correspondence with hundreds of manufacturers, universities and research organizations.

"The terms included in this dictionary may be divided into six categories (though the largest proportion falls into the first two groups) as follows: 1) industrial raw materials used in the production of paints and allied products; 2) trade names of raw materials and certain finished products; 3) terms describing processes, methods, systems, etc.; 4) terms denoting scientific instruments used primarily for evaluation purposes; 5) terms denoting colors, optical effects, textures, etc., and 6) miscellaneous terms which give general information to the reader, jargon expressions peculiar to the industry, etc.

"Many of the outstanding authorities in the paint and allied industries have cooperated with me by contributing ideas and suggestions for this new volume."

Copies of this new reference book are priced at $7.50 each. Orders for it will be accepted and filled by this magazine.

Burdett Mfg. Co. Promotes Two Key Men

Burdett Mfg. Co., Chicago, Ill., originators and builders of the "Infra-Red" gas burner, announces the promotion of Mr. Donald C. Scheele as General and Sales Manager, and Mr. Robert B. McCormick as Treasurer.

Mr. Scheele has been an engineer with Burdett for nine years. He is a graduate of the University of Illinois. Mr. McCormick, the new treasurer, also came up through the ranks of the organization; he is a grandson of the late founder, J. B. Burdett, a pioneer in industrial heat treating.

These promotions give evidence of an entirely new sales policy based upon a growing acceptance by industry of the "Infra-Red" gas burners. Burdett moved into new and larger quarters last December and doubled its production capacity, an expansion of manufacturing facilities and floor space that was required to meet the rapid increase of new business.

J. H. Chopa Manages Chicago Div'n of Berry Bros.

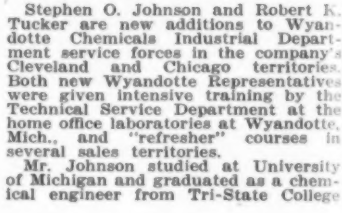
Berry Brothers, Inc., Detroit manufacturers of paints, varnishes, enamels and lacquers, announces the appointment of Jerome H. Chopa as manager of its Chicago Division.

Mr. Chopa has sold Berry Brothers trade sales and industrial products in the state of Wisconsin, for the past 20 years. "Jerry" is well-known to the paint trade, particularly in Wisconsin, and his many friends will be pleased to learn of this well-deserved promotion.

Wyandotte Chemicals Adds to Its Service Forces

Stephen O. Johnson and Robert K. Tucker are new additions to Wyandotte Chemicals Industrial Department service forces in the company's Cleveland and Chicago territories. Both new Wyandotte Representatives were given intensive training by the Technical Service Department at the home office laboratories at Wyandotte, Mich., and "refresher" courses in several sales territories.

Mr. Johnson studied at University of Michigan and graduated as a chemical engineer from Tri-State College of Indiana. He joined the Wyandotte Chemicals Research Department early in 1942. At the close of the war activities he was assigned to the Inorganic Section of the department and assisted in the preliminary studies which led to the development of Wyandotte Zorball—the new Wyandotte all-purpose floor absorbent.



S. O. Johnson and R. K. Tucker

Mr. Tucker is a graduate in chemistry from Albion College of Michigan. He completed his studies following 3½ years in the U. S. Army which finally lead to occupation duty in Tokyo. He joined Wyandotte Chemicals February of this year.

Cleaning Metal

FOR PAINTING

I HAVE looked into many factories and I have seen all kinds of surface preparation methods being used. Each method and material apparently has a particular merit for the job of cleaning and preparing surfaces for organic finishes. The type of metal being used and the kind of oil or grease adhering to it when it is received in the finishing room—usually this determines the surface treatment required. The shape of the piece is also a contributing factor.

How a Custom Finisher Selects Cleaning Material

The best place to run a test, I believe, is in a custom finishing shop where other firms send in all kinds of products to be finished. I asked the manager of a large custom finishing shop just how he decided on the surface preparation of so many and such a variety of metal products. He told me they tried to find out the type of drawing compound used in the fabricating shop, then they used a vapor degreaser, or alkali cleaner, or mineral spirits, depending upon the dictates of previous experience.

They always try to use the cleaning agent that is the best solvent for the coating (drawing compound, grease, oil, etc.) on the metal pieces. They have all three cleaning methods available. If it is impossible to find out what type of drawing compound was used on the metal, then they experiment with the three methods of cleaning and use the one that cleans the metal most effectively.

Automotive Mouldings Cleaned in Molten Caustic

One nationally known firm in the automotive industry tried alkali cleaners of all types to clean inside metal mouldings for automobiles. The materials they used cleaned the surfaces, but a wiping job was necessary after cleaning. This added to the cost and they searched for other means. They experimented with certain other cleaners which cleaned the flat and slightly rounded surfaces satisfactorily but did not clean the tight places, such as the roll rims where the radius is perhaps only 1/8-in.

By F. L. KINRAB

A shop traveler spots a few highlights on cleaning metal surfaces before painting, and tells why certain equipment and materials are chosen and used for different products.

Finally they decided on the molten caustic method which consists of placing caustic in powder form in a vat equipped with electric heaters and heating the caustic to 750° F., and maintaining it at that temperature. At that heat the caustic becomes molten and remains that way. The metal mouldings are submerged in the molten caustic for 65 seconds; then they

are withdrawn and allowed to drip for ten seconds. Next they are subjected, in turn, to a hot water rinse, phosphoric acid, cold water, hot water, and finally they pass through a drying oven. They come out clean without any residue, therefore no wiping is needed.

Rejects are put on the same conveyor line and run through with new work. The finish on reject pieces strips off and the mouldings come out as new and clean as the pieces that just arrived from fabrication.

Now as I see it, all of the industrial concerns who have a job of metal cleaning to do, and all firms who sell degreasers, solvents and petroleum spirits couldn't be wrong. Perhaps some of them could stand to improve their methods of cleaning and the products they make. I like to see anyone enthused over his product, but when he declares that it is the only method of cleaning and preparing any metal surface for painting or plating, then that statement requires definite proof.

Here Acryloid resin enamel is being sprayed onto stove parts with hand guns in this water-wash spray booth. These finishes retain their original bright color, are proof against fumes, grease and alkali. Photograph was taken in the plant of United Stove Co., Ypsilanti, Mich.

Bonderizing helps keep cars looking new by preserving and protecting the fine finish.

Now, more than ever before, manufacturers Bonderize bodies, fenders and sheet metal parts before application of the organic finish. Bonderizing creates a nonmetallic, crystalline, phosphate coating over and integral with the metal, gives paint a microscopically toothed surface on which to anchor itself against chipping, peeling, and flaking.

Nonmetallic Bonderite effectively retards rust and corrosion, confines damage around dents and scratches to the injury itself.

Bonderizing is simple, fast, economical, adds sales values and satisfaction far beyond its cost.

Investigate Bonderizing to protect and preserve the fine finish of *your* products.

PARKER RUST PROOF COMPANY, 2176 East Milwaukee Ave., Detroit 11, Michigan

BONDERIZING	PARKER PROCESSES	PARKERIZING	PARKER PROCESSES	PARCO LUBRIZING
Holds Paint to Metal		Inhibits Rust		Retards Wear on Friction Surfaces

Bonderite, Parco, Parco Lubrite Reg. U.S. Pat. Off.

Traveling Window Display by W. L. Stensgaard and Associates, Inc.

Decorating Merchandise Displays

MERCHANDISE displays, to be effective, must create an effect and an atmosphere commensurate with the goods to be presented. To accomplish this many different materials and combinations of materials have been made available for use. Choice of materials depends largely upon the type of display, size, quantity, and cost limitations.

Displays may be divided into three general classifications—counter or spot, window, and traveling displays. The latter consists of a complete window display for a nationally advertised product which is loaned to retail stores by the manufacturer—to be featured for a specified time, and then shipped to another retailer, and so on. An example of this type of display is shown on the opposite page, presenting Ivory soap flakes. Local color, such as an artificial grass mat for the floor and several child manikins grouped at play, is supplied by the retailer. Most of this display is made of papier mache, wire and plastics. The figurine on top of the blocks is a wood carving.

A typical example of counter display is shown in the pictures of two Disney characters done in papier mache, including the base. A special display is illustrated (elsewhere in this article) in the papier mache drum majors finished in bright colors with flocked shakos, epaulets, and sash. The base is wood. Other displays include solid wood fixtures and cabinets with plywood and composition board panels, and figures in plaster.

How Papier Mache Is Coated and Finished

Space does not permit going into minute detail on finishing the various displays. However, I shall

By C. H. ZEILER

Factory Manager of W. L. Stansgaard & Associates, in Chicago, explains and illustrates how striking displays, made of various materials, are decorated for eye appeal.

"Panchito," a Disney character made of papier mache finished in colors.

give you the finishing procedure employed on the main classification of materials. Let's consider papier mache first. Items molded in this material are given a heavy spray coat of filler sizing made of animal glue, water and French talcum powder. This mixture is boiled, and sprayed hot. During the winter months it is possible to keep the filler sizing as long as 36 to 48 hours before it spoils. Otherwise this time is reduced to 24 hours.

The filler sizing is allowed to air dry eight hours; then a glaze coat of clear lacquer is applied to the papier mache surface. After a drying period the glaze-coated surface is hand sanded with No. 150 sandpaper. A blow off and wiping follows. Then a coat of clear lacquer sealer is sprayed on.

The base-color coat of lacquer is applied. By base-color coat, I mean the predominating color of the piece. For instance, the drum majors illustrated here receive a coat of white lacquer. The blue jacket, gold braid and red shako are applied later. From this point, it becomes a decorative job.

Special Decorating Enters the Picture

All shading is done with an air brush. Eyes, eyebrows and lips, as well as "Joe Caricoa's" hat band, tie and umbrella are painted in by a hand brush. All of this must be done on a production basis.

A section of the decorating rooms is shown at upper right in the illustration extending across two pages. Only miniatures are decorated here. Another department applies lettering, and some designs by the silk-screen process. Still another is used for the application of adhesives and flock.

On display pieces that require special treatment, the filler sizing coat is omitted; instead, a coat of

Also a Disney character, Joe Carioca.

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On an automatic stoker production line the fast Eclipse GAT gives an even, one-coat finish.

Today you need both *speed* and *material savings* to stay competitive. And you get *both* with the Eclipse GAT—plus an even spray pattern and a gun that stays on the job.

Costs must be lowered with better equipment, as everything else goes up, or there will be red figures.

New Bulletin is now ready—yours for the asking.

ECLIPSE AIR BRUSH COMPANY

392 Park Avenue **Newark 7, N. J.**

ECLIPSE

The colorful drum majors receive special decorative treatment by an expert.

lacquer is applied, followed by a coat of pigmented lacquer. The piece is then hand decorated and given a spray coat of 6-hour varnish. This is followed immediately by an application of tiny glass beads. The beads are sifted on comparatively small areas, and on large surfaces they are sprayed on.

Perhaps you have seen in a show window a black velvet back drop with a large stippled gold frame in which a special piece of merchandise was featured by a spot light. The papier mache frame was probably finished as follows: First, a coat of clear lacquer sealer. Next, a stipple coat composed of lacquer sealer and French talc. This is always a white coat. After drying 15 minutes, a coat of white lacquer is sprayed. The gold stipple

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ADHERENCE ALONE isn't enough in a finish when the product may be subjected to twisting or bending—as in a measuring tape, for example. You need *flexibility* also, to prevent chipping or cracking.

And when you can also get *film hardness*, and clear, high *gloss* in the *same* synthetic coating—you have a finish that's really outstanding! Those are the very properties—all four—offered you in Coating B-115.

Which is why one manufacturer chooses B-115 to help "sell" flexible steel tapes. Another manufacturer finishes strip with B-115 *before* fabricating his product, for he finds those properties permit subsequent forming without any harm to fine appearance!

Whatever you make, chances are there's a Unichrome finish with the right combination of properties for it—ready to help you save on rejects and build sales. Write today for more details on Unichrome Synthetics and Lacquers.

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is the final operation. For this, French talc is mixed very thin with bronzing liquid to produce a fine stipple. Only an experienced spray operator can produce the desired effect, as the angle at which the spray gun is held in relation to the work, and the speed of the stroke, are contributing factors to good work.

Plaster components are generally on the miniature side and do not require as much preparation for finishing as papier mache. Plaster items are given a spray coat of white lacquer; this is followed by an air-drying period of 30 minutes. If a base color other than white is required, it is given a spray coat of pigmented lacquer. In either event, the next step is air brush or hand brush decoration. In the case of plaster items most decorating is done by air brush.

How Wood Carvings Are Prepared and Finished

Wood carvings for display items may range from small figurines to oversize figures of people. Regardless of size, the carvings are given a spray coat of clear lacquer. This is followed by a "knife glaze" of lacquer-base putty to fill small holes, cracks or indentations. Next comes a careful hand sanding over the glazed areas with No. 320 sandpaper. Then a second sealer coat of clear lacquer is sprayed on and, after drying, the base-color coat of lacquer is applied. In a few cases carvings may be decorated partially with an air brush, but most carvings are decorated by hand only.

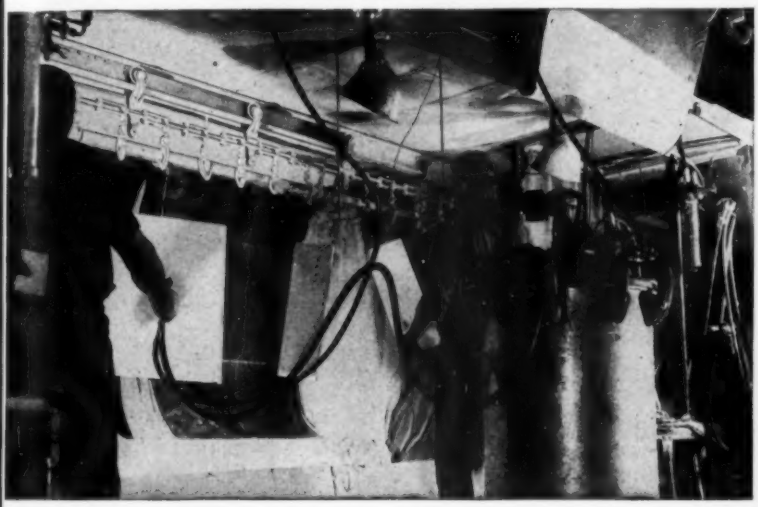
Finishing Display Fixtures in Natural-Wood and Colors

Display fixtures are constructed principally of solid wood, flat and bent plywood, and occasionally a small amount of composition board. Wood fixtures are given a brush coat of filler, which is padded in, cleaned off and air-dried for eight hours. Next comes a spray coat of clear lacquer sealer. When dry, all curved surfaces are hand sanded, while flat surfaces are sanded with electric portable sanders, using No. 150 sandpaper in either case.

Carver working on huge figure of a man, to be used in mechanical display for Palm Beach suits. Upon completion it will go to finishing room. Final touches will be applied by hand.

After a thorough cleaning, the fixtures receive a second sealer coat of lacquer. This is followed by light sanding, using No. 320 sandpaper. The final coat of either clear gloss or flat lacquer is applied to all fixtures to be finished

R·M enamels meet rigid demands of large stove manufacturer . . .



ONE OF the largest stove manufacturers in the middle west, employing the most modern techniques throughout its entire assembly operations, has secured for itself an enviable reputation for top quality domestic units.

Rinshed-Mason special high-heat-resistant baking enamels and primers, used on the various models, closely match porcelain for appearance and durability. R-M laboratory developed enamels are non-yellowing, retain their original bright color, are proof against fumes, grease and alkali.

Your inquiries are cordially invited.

Rinshed-Mason Company R-M Finest Industrial Finishes

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View in finishing room showing one of the 4-man spray booths used for finishing ordinary work. Work stands are portable and may be removed so that extra large displays can be finished.

in natural wood, while those requiring a color finish are given a coat of pigmented lacquer.

Colors and Swatches

Colors used in merchandise displays are always the unusual; that is, they are never standard colors. Every color we use must be mixed in our laboratory. Ordinarily we purchase clear gloss lacquer, and flat and white lacquer in drums. Other colors are bought in 5-gallon to 1-quart cans, depending upon the size of the job, and the possibility of a repeat order.

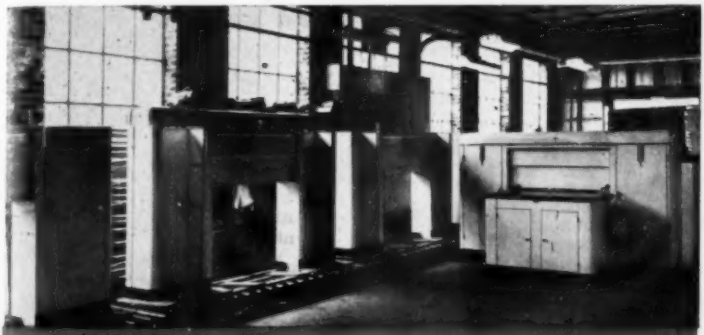
In mixing each color enough lacquer is always prepared to complete the entire job, and a color swatch is made of each color used on the particular job. These swatches are identified by job number, part number and color mixture. They are filed in a cabinet according to the job number. On repeat orders it is a simple matter to draw these swatches to be used as a guide to mix colors to make identical merchandise displays.

Solvents—Safe and Dangerous

IN MOST PLANTS, regular solvent operations are kept safe through proper ventilating systems and other controls. However, even in "safe" plants, employees may take it upon themselves to employ solvents for improper purposes, thus opening the way for fire or illness.

Control of solvent distribution within the plant can help to prevent unauthorized use of solvents. Such use, or rather misuse, of solvents is not only wasteful but it sometimes results in serious accidents which give rise to unwarranted fears of properly regulated solvent-using operations.

One fairly widespread example of unauthorized employment of solvents is their use for cleaning hands or clothing at the end of the work day. When brought into frequent direct contact with the



For fast-moving PRODUCTION LINES!

INFRABAKE WHITE Nº 107

"Smart looking cabinets . . . those Lincoln Service Merchandisers for garages and service stations!"

And Berry Brothers' Infrabake White No. 107 keeps them rolling off those fast-moving Lincoln production lines, faster and faster, to meet the rapidly growing demand!

Infrabake White No. 107 is a real, time-saving, production-pushing finish.

Here's the Lincoln system—

1. **Cleaned metal parts are hung on conveyor chain;**
2. **Enter spray booth where one painter sprays prime coat and another (2½ min. later) sprays finish coat of Infrabake White No. 107;**
3. **Parts then pass into heat room (74° for 2 min.) and through infrared tunnel (328° for 5 min.);**
4. **Cool, inspect and assemble.**

Berry Brothers' Infrabake White No. 107 is one of the most popular postwar white enamels. It applies easily, hides well and is very high in color-retention after baking.

Let us tell you more about it and supply you with a sample. A letter will bring you further facts quickly.

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skin in this way, most solvents will cause drying, cracking, and infection. Improper handling of solvents in this manner may also result in inhalation of unsafe quantities of solvent vapor and, in addition, may create a fire hazard.

An unfortunate misuse of solvent occurred in one plant when an overly conscientious workman decided to clean the greasy floor around his work bench. For this purpose he employed a solvent which seemed to be doing an excellent job in a nearby degreasing machine. He did not realize, however, that the engineering apparatus which controlled the solvent vapor in the degreaser was not designed to provide protection for operations like his self-elected floor cleaning job. He spent several days at home recuperating from solvent vapor illness.

Taking solvents home for household use has also been the cause of a number of accidents. In one instance, an employee took home a large quantity which his wife used to clean a rug. Having no experience with or knowledge of the proper use of solvents, the housewife cleaned the entire carpet with the solvent, without opening any windows. The inhalation of concentrated solvent vapor resulted in her death several days later.

In some other cases, inflammable solvents have been taken home to do dry cleaning. Fire safety procedures, which are taken for granted in the plant, are often ignored in the home, with occasionally disastrous results.

Elimination of unauthorized solvent use is thus important to both management and employee, and should be a permanent part of the safety program.—SAFETY RESEARCH INSTITUTE.

Where and Why Finish Fails

FAILURE of any paint film always begins at flaws and weak spots in the film. In outside paints that show brush marks, checking, cracking and crumbling of the films always begin in the low spots or "valleys." These are the points of weakness. A paint film of the same average thickness, but free of brush marks, may have up to 50% longer life. Likewise, paints over such open-grained woods as oak, ash and chestnut, will always begin to break around the pores unless these open pores in the wood have been filled with paste filler. That is one of the reasons why these woods have poor paint-holding ability unless properly filled.

In furniture finishes, cracking and checking always begin around pinholes, thin spots, and other flaws in the film of coating material. In metal finishes failure begins around pinholes and other flaws that permit moisture to penetrate to the bare metal. There is always internal stress in paint films that are subject to varying conditions of heat, sunlight and humidity; hence it is to be expected that failure would begin at the weak spots.

This illustrates the need of striving to *produce smooth films of uniform thickness, free of flaws,* wherever paint is used. This means a smooth base, proper use of primers, glazing putties and fillers; and proper sanding and cleaning up of undercoats. It also means both the work and the paint should be free of grease, moisture and dirt; and that the paint should dry in a clean, warm atmosphere. —F.H.

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Toys
Office Appliances
Household Appliances
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Electrical Equipment
Insulated Wire and Cable
Impregnating Compounds
Metal Decorating containers, closures, etc.

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All types

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All types

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A complete line of Paints, Varnishes and Enamels

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R. I. W. Water-resistant Compounds
Technical Finishes

EXPORT
Industrial and Trade Sales

• Standard Varnish has over 75 years' experience in the development and research of protective and decorative coatings.

• Our steady growth and integrity have made us an independent leader in the industry.

• Quality control and personalized service assure you uniformity and the best products for your specific needs.

STANDARD VARNISH WORKS
Engineers of Product Finishes
NEW YORK LINDEN, N. J. CHICAGO

Pine Tree Wrinkle

By Floyd H. Cohagan

THE APPLICATION of a "pine tree wrinkle" coating is governed largely by the type of wrinkle finish desired—that is whether you want a large or small pine tree effect. The most foolproof application, according to my experience, is as follows:

In order to produce a uniform texture I would first mist coat the article to be finished with wrinkle enamel. Then apply a good wet coat of the material over the mist coat, being very careful with the spray application. It is important to get the spray coat as nearly uniform in thickness as possible. The width of the spray should not be set too wide; neither should it be too narrow. A medium should be set between narrow and wide; this will produce a uniform coat free of streaks, etc.

The spray stroke should pass off the end of the object, and the gun should be triggered or shut off at the end of each stroke, and opened up at the beginning of the stroke. If this procedure is followed, there should not be any heavy sags at the ends of the object being sprayed.

Results depend largely on the operator and the types of materials he uses. In other words the spray operator must be familiar with the material and know how it will act under certain conditions.

The type of fluid tip, air cap and fluid needle for the spray gun will depend on the type of materials used and the results desired. Usually I prefer a type "E" fluid tip and needle, and No. 792 air cap for the make of gun I use. This produces the desired effect.

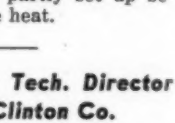
The air pressure most suitable for spraying also depends on the type of materials used and the effect desired. Heavier bodied materials require more pressure in the tanks. I have known pressures used from 25-lbs. up to 60-lbs. in the tank—according to the materials used. The pressure at the gun is usually from 50 to 65-lbs. An operator must have the "know-how" in order to produce uniform results.

It is sometimes best to let the article set out in the open from five to 15 minutes before being placed in the heat. This sometimes will help produce a more uniform wrinkle, as it is partly set up before entering the heat.

Hilliard, New Tech. Director for The Clinton Co.

The Clinton Co., manufacturer of finishing materials, Chicago 22, Ill., announces appointment of Donald A. Hilliard as Technical Director.

Mr. Hilliard is a member of the American Chemical Society, American Society for Metals, the American Electroplaters Society, and the S.A.E. He has a B. S. degree in Chemistry from Rensselaer Polytechnic Institute, and has taken graduate courses in Paint and Pigment Technology and Organic Chemistry at Brooklyn Polytechnic Institute.



D. A. Hilliard new Technical Director for Clinton Co.

Before coming with The Clinton Co., Mr. Hilliard was employed by some nationally known manufacturers of finishing materials. He has written many articles on finishing materials, and was formerly technical editor of a finishing magazine.

FINISHING *Metal Caskets*

A practical and experienced man familiar with finishing caskets explains a technique of producing that attractive high luster finish you see on so many fine metal caskets.

By F. M. HAGAN

THE suggestions and recommendations I am submitting in this article are based upon observation and experience extending over a period of several years. As in the finishing of practically all metal products, surface cleaning and preparation are the first steps in finishing metal caskets. When metal casket shells are delivered from the sheet metal department, they must be thoroughly cleaned. One practical and popular method is to use a naphtha cleaning as follows:

Preliminary Cleaning; Naphtha Wash; Wiping

First, dip a hand mop into a container of the cleaner and mop the casket thoroughly on all surfaces that are to be painted. Wipe these wet surfaces clean and dry with soft rags, preferably laundered rags as they have more absorption than starched rags. Then sand the surface with No. 150 sandpaper, removing all specks of solder, weld splatter, etc.

Dust off the entire surface and check it for dents and bumps. Take care of these bumps and dents by hammering down the bumps and hammering out the dents. If imperfections are found that cannot be removed in this way, chalk mark the spots and use the following method for fixing them.

Use Putty to Build Up or Smooth Out Imperfections

Use a 2½-in. flexible blade glazing knife. Grasp the knife in the right hand with the thumb under the handle; place the index finger on the left corner of the blade and place the second finger on the right corner of the blade. This hold will flex the blade, causing it to curve upward in the center so it will leave a heavy deposit of putty in any spot that is to be puttied.

For all fill-in or build-up jobs use white pyroxylin putty. After the applied putty is dry—usually in one hour—sand the puttied place to a smooth surface with No. 150 sandpaper, taking care to sand the outside edges to a feather edge. The putty should be applied as smoothly as possible; a little practice will make this easy, and will leave little if any sanding to be done.

Prime Coat Technique; Wet Rubbing

Following the operations just outlined, the casket shell must be cleaned of dust by wiping with clean cloths, or by blowing it clean with a jet of compressed air. Then it is ready for the prime coat, which is put on as follows:

First, coat all miter joints or any other places where grinding or spot puttying has been done. Then recoat the entire casket, spraying on a good wet coat. For this job, use about 12-lbs. of air in the tank and 55 to 60-lbs. at the gun. Use gray lacquer primer surfacer for this operation. *(To p. 76)*

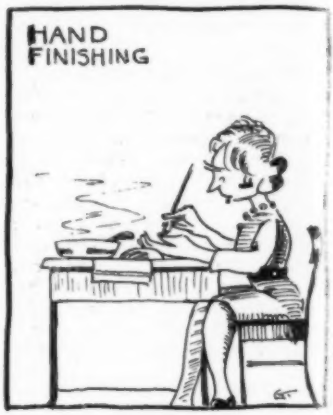
Now the casket is ready for wet rubbing—that is after the primer coat is thoroughly dry (usually in two hours). Wet rub with No. 360 wet-or-dry sandpaper, using water for a lubricant. After the casket is rubbed, clean the surface with clean water and a sponge. Let the surface dry for one-half hour and wipe it clean with tack rags.

Apply Color Coats, Shading and Topcoat

The casket is now ready for its color coats and finishing. Some attractive and desirable effects can be produced by using opalescent colors of the shades desired. Ordinarily the finisher will mix two parts of lacquer thinner to one part of color and spray from pressure tanks.

Use about 6-lbs. of air pressure in the tank and about 60-lbs. at the spray gun. First put on a light coat of color over the primer—this to prevent the dappled effect that will appear if the first coat is applied too wet. Then spray the second coat, putting on a fairly wet coat. If shading is to be done, spray the shading color from a pint or quart cup attached to the spray gun, and adjust the nozzle to make a round spray. Apply the shading where desired. The casket is then ready for the first application of clear topcoat lacquer which should be applied as follows:

Use 8 to 10-lbs. of air pressure in the tank and 55 to 60-lbs. of air pressure at the spray gun. Spray on a good wet coat. Give this coat time for the thinner to "flash off" (dry quickly). While waiting for this "flash off", the next casket can be wiped clean and made ready for the color coat. Apply the second coat of clear lacquer in the same manner as the first coat. Then set the caskets away to dry. Forced drying is occasionally used, but I



do not recommend it because sometimes the solvents are trapped under the hard film of topcoat lacquer and will pass off after the polishing is completed, resulting in a dulling of the high luster. I recommend an over-night drying before rubbing and polishing for the permanent polish.

Rubbing and Polishing Machines and Methods

Next comes the rubbing and polishing job. Rub the surfaces where desired with No. 400 wet-or-dry sandpaper, using water for a lubricant. Rub carefully to avoid cutting the edges or any of the surfaces because, if this happens, the polishing operations will cut through the film of clear coat, and refinishing will be necessary.

The final polishing for a high luster finish is done as follows: Either use sheep skin bonnets on an electric or air-driven polishing machine traveling 1250-r.p.m., or use 12-in. Canton flannel buffs on a flexible shaft attached to a 1½-hp. motor—the motor being mounted on a table about 3½-ft. high. Use five or six sections of the 12-

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FURNITURE LACQUERS WRINKLE FINISHES
CLEAR AND PIGMENTED METAL LACQUERS

THE CLINTON COMPANY 1210 ELSTON AVENUE CHICAGO 22, ILLINOIS

in. Canton flannel buffs, and clamp them to the arbor by using a large washer next to the tightening nut. Use the edges of the buffs for a polishing surface. This polishing operation must be performed carefully; the polishing wheel must be kept moving so as not to cut through the finish, especially along the sharp edges of the casket.

The abrasive used is a polishing paste cut to a thin consistency with naphtha and applied to the surface with a heavy bristle paint brush. Spread this thin paste on liberally all over the surface to be polished; then go on with the polishing wheel and polish out to a high luster.

For cleaning the polishing wheel, use a wire-bristle brush and hold it on the wheel while the wheel is in motion; this will clean out the compound and give the wheel a new polishing surface. Sheep skin bonnets must be taken off and soaked in naphtha over night, and then blown out clean with compressed air.

Author's note: I will be glad to furnish additional technical data, such as specified spray gun air cap, fluid tips, etc., plus names of other equipment and materials. Just write me in care of this journal.

Check Operation of Ventilation Setup

VENTILATING equipment provides basic protection from health and fire hazards in the solvent department, and should be inspected regularly. Even well-designed ventilating systems will become inefficient unless properly maintained. To eliminate the five most common causes of failure of ventilating equipment, the following points should be checked:

Is fan running backwards? Strangely enough, this is the most frequent reason for failure of correctly designed equipment. Sometimes a fan requires repairs, and then is reversed when it is started up again. A regular check on the direction of fan motion is needed.

Is fan belt loose? Loose belts cause the fan to run too slowly. Since new belts generally become somewhat slack after use, they should be adjusted after installation.

Is system overloaded? While a system may be correctly designed for the initial load, it often happens that additional outlets are later added, reducing the overall efficiency of the equipment. The velocity of the air stream should be measured regularly, and whenever additional ducts are added.

Are ducts and blades dirty? Dirt in a ventilating system is a frequent cause of breakdown and inefficient operation. Systems should be cleaned regularly. Fans should be run for a few minutes after operations are finished, to allow for complete emptying of the ducts.

Is there enough make-up air? Since ventilating equipment exhausts air, it cannot run efficiently unless there is provision made for enough make-up air to enter the room. — *Safety Research Institute.*

Wrong Caption Under Cut in August Issue

In August 1947 issue, on page 94, if you read the caption under the large picture showing a man emptying the contents of a shipping drum into one of a row of mixing tanks, you knew that something must be wrong. In the course of make-up, the wrong lines of type were placed under this cut. The correct lines for this cut read as follows: "Here are mixing tanks and pipe lines which supply paints to spray booths in the automobile painting section of Kaiser-Frazer Corp. in Detroit, Mich."

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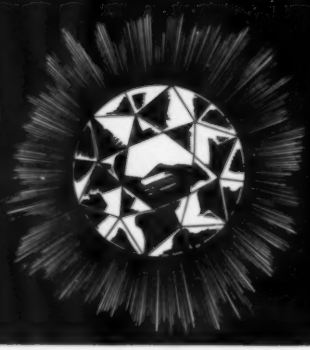

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Why Some Wood Finishes Have Poor Adhesion

BY ROLLIN H. WAMPLER

BRITTLENESS and poor adhesion are inherent faults resulting from certain methods of finishing furniture. In the development of such finishing systems, the prime considerations have been to produce smooth, full finishes that, with a minimum of operations, may be easily rubbed to a haze-free surface. These results are often attained at a considerable sacrifice in toughness that a good finish should have.

Before proceeding further we should remember that toughness and adhesion are two separate and distinct characteristics of any surface coating. In practice they are so closely related that the practical furniture finisher seldom attempts to distinguish between them. Brittleness and poor adhesion are present in finishes that scratch white or mar easily at the slightest impact. For example, an inherently tough floor varnish applied over a short, brittle varnish will invariably produce a brittle finish when dry. The toughness of the varnish is entirely lost by the brittleness of the undercoat.

In this article I shall not attempt to differentiate between brittleness and poor adhesion, because of their close relationship.

The most serious indictment of some present-day furniture finishes is that they are developed and selected largely on the basis of appearance. While this is and will probably remain the most important consideration, toughness and adhesion of the finish should be given careful attention. A quality furniture finish should withstand the ordinary scratches and light blows of every-day service without the film breaking or flaking off the wood.

In this article I will list and explain some of the things that produce brittleness and very poor adhesion in furniture finishing systems. These are not purely theoretical considerations, but things which have shown up repeatedly in practice. By studying them the furniture finisher will be able to select and use finishing materials which give excellent appearance without sacrificing toughness.

How to Test Fillers

Fillers often vary widely in their effect on the adhesion of topcoats. A good way to test two fillers for adhesion is to apply some of each filler over half of the same panel. Then finish in the regular manner, with the same materials over the whole panel. Allow to age three weeks in the air, or force dry five days at 140° F. Then test by scraping a coin over each half of the panel, noting any tendency of the film to scratch or pull free.

It is unfortunate that many of the commercial fillers which hold out succeeding coats best give the poorest resistance to marring.

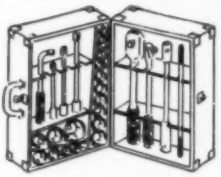
(Continued on page 82)

HILO
LACQUER LEADERS

No. 3 RED SEMI-GLOSS LACQUER

Makes Tool Boxes Look Better—Last Longer

Take the case of the manufacturer of socket wrench, tap and die sets. This manufacturer has been finishing his boxes for these tools with Hilo Bright Red Lacquer for many years. He uses a single spray coat of No. 3 Red Semi-Gloss, reduced 1 part of Lacquer to 1 part of LL Lacquer Thinner.



Hilo No. 3 Red Semi-Gloss, he says, adheres well to the hot rolled steel; dries quickly to a smooth, hard coating that is not affected by lubricating oil and grease; keeps the boxes new-looking for a long time.

This lacquer is also excellent for giving a bright, eye-catching finish to small metal parts.

HILO

Send today for a sample of Hilo No. 3 Red Semi-Gloss Lacquer for test in your plant.

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Fillers can be specially formulated and made to produce good adhesion. The user is advised to test competitive fillers to find the one which gives the best mar-resistance to topcoats.

Many times fillers show specific effects; that is, filler A may hold out topcoat A better that filler B. On the other hand, filler B may hold out topcoat B better than filler A. The discovery of such relations is part of the selection of materials for a mar-resistant furniture finish.

When to Coat the Filler

Coating some fillers before they are thoroughly dry may cause poor adhesion. This is particularly true of the long oil type fillers or those intended for air drying over night. Only careful testing of the fillers you are using will establish this fact. The so-called 30-minute fillers which may be coated with lacquer sealer 10 to 30-minutes after wiping are especially formulated to eliminate the possibility of poor adhesion due to early coating. Here again tests will show the filler best suited to your schedule and topcoats.

Formulation of Pigment Stains or Glazes

As in the case of wood fillers, competitive pigment stains and wiping glazes will often show considerable difference in the way they affect the adhesion of topcoats. The best way to find these differences is to run tests similar to those run for fillers. Wiping glazes in particular will show wide variations.

The length of time a pigment stain, applied directly on the wood, takes to dry, seems to have little effect on adhesion of the finish, provided it is coated over after normal drying period. In fact, some of the newer pigment stains can be coated in 30 minutes, often with a slight gain in adhesion.

The drying time of a wiping glaze, applied over a lacquer sealer or a special glazing sealer, does have a profound effect on the adhesion of topcoats. It is best to wait until the film is "set" and practically free of solvent.

If this is not done the glaze may not "knit" in the film, resulting in a point of weakness. The dry film may scratch or flake off down to the glaze layer. This effect is sometimes called "shelving."

Too Much Stearate in Lacquer Sealer

Practically all wood furniture is coated with lacquer sealer which is the first continuous film-forming coating. This sealer is dry-sanded smooth before application of any lacquer or varnish topcoats. Now to facilitate this dry sanding process, lubricants, often called sanding agents, are added to the material.

The sanding agent is generally zinc stearate, which is a smooth, slippery soap. Zinc stearate minimizes scratching of the film and clogging of the sandpaper. However these sanding agents always detract from the toughness and adhesion of the finish. High-solids sealers heavily loaded with sanding agents to give easy, powdery sanding in 20 minutes give good holdout, but they also produce a brittle finish. To obtain a good finish it is advisable to use a sealer which can be sanded in the closest possible time limits.

The stearate sanding agent in sealers tends to settle to the bottom of the container into a soft layer, leaving a clear layer on top. This will occur if it is allowed to stand overnight. If the sealer is not

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well stirred before some is drawn off the next morning for use, the sealer from the bottom of the container will contain too much stearate, and the film will be quite brittle. The sealer drawn from the top will not contain enough sanding agent, and will be difficult to sand. Sealer material should be thoroughly stirred to promote uniformity.

Fast-Drying Sealers

Sealer in which the solvents evaporate within about half a minute may have very good holdout properties. But, in most cases, this sealer will produce a brittle film. This is because the sealer has had no time to penetrate into the filler and fibers of the wood to secure a firm hold. A properly formulated sealer should remain wet for several minutes in order to secure adequate anchorage.

Brittleness in Sealers

Some sealers produce long, elastic films, others may be quite brittle. You can easily find the difference by spraying or flowing out various sealers on glass. The difference is obscured when applied on wood, but is readily apparent on glass. Some will be found to be elastic and adhesive; others will fly off in little flakes when scratched. A long or elastic sealer can be made to sand satisfactorily if the correct amount of sanding agent is added. A tougher finish is produced unless too much sanding agent is used.

High Solids in Sealers

Since sealers are quite likely to detract from the toughness of the finish, the film should be as thin as possible. A 21% solids lacquer over a 21% solids sealer is much more likely to be brittle than a 25% solids lacquer over a 15% solids sealer. Some manufacturers of furniture use sealers of 10% solids because they give better toughness than those with higher solids. Other manufacturers eliminate the sealer entirely and instead, apply a thin wash coat over the filler to stiffen the fibers of the wood so that the surface can be lightly sanded.

The toughest finishes are produced by eliminating the sealer entirely. At least one manufacturer of quality furniture applies a thin coat of regular gloss lacquer reduced to 10% solids in place of the sealer coat. This coat is lightly sanded followed by a double coat of flat lacquer.

Testing Top Coats for Brittleness

The brittleness of topcoats can easily be determined by flowing out the lacquer or varnish on glass, allowing it to dry, and then scratching with a knife. The longer, more elastic films give more adhesive finishes. They may be a little harder to rub down than short, brittle materials, but proper rubbing procedures will produce good results.

Too Much Drier in Varnish Will Cause Trouble

Occasionally trouble will be experienced after applying the second coat of varnish. When dry, the two layers of varnish may easily be separated, producing the shelving action referred to previously in the article. The cause may be that the first coat dried too hard. The second coat fails to soften it enough to get good adhesion. This trouble is easily corrected by having your supplier reduce the drier content of the varnish. This trouble never appears in working with lacquers. *(To page 86)*

The Artistic Touch

When our artists conceive an effective, arresting finish for your merchandise, it's no mere coincidence that the coating does justice to its fine lines and design. You see, every job is treated as an individual job...every product receives special attention in our modern Creative Studio. That is your assurance of getting the best possible finish for your money.

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Method of Curing Urea-Alkyd Finishes

The low temperature urea-alkyd furniture finishing materials cure quite hard and become very insoluble. If two coats are to be applied, the first coat should be cured little, if at all. Best results are obtained by double-coating. The first coat is sprayed on, allowed to flash 30 minutes, then the second coat is applied. The entire finish may be cured at one time.

Sanding Old Finishes for Recoating

In recoating any finish that is several months or years old, it should first be well sanded. Best results are obtained if it is wet-sanded, using water as the lubricant. However, it may be dry-sanded if fine paper, such as 6/0 or 8/0, is used. This is particularly true with varnishes and urea finishes. Lacquers seldom give trouble in recoating.

Sherwin-Williams Opens An Ind. Div'n. in Grand Rapids

Complete finishing service for manufacturers in the Great Lakes Area is now available through the new Sherwin-Williams Great Lakes Industrial Division which has opened in Grand Rapids, Mich., at 112-118 S. Division.

Frank E. Ehrett is manager of S-W's Ind. Div'n. in Grand Rapids, Mich.

Frank E. Ehrett, Western Michigan Industrial Representative since 1936, is manager of the new division.

Manufacutrers in the area will be serviced by a well-trained staff which has been increased to handle all types of finishing needs. Three factory points at Chicago, Detroit and Cleveland, plus the close affiliation with the Sherwin-Williams Allied Research Department at Chicago, assure manufacturers of excellent service.

"Field Laboratory," which has been located in Grand Rapids for the last three years, has been expanded to facilitate the complete engineered finishing service offered.

Color styling, planning and engineering assistance on all finishing problems will be available. Development and service work will cover all branches of the finishing industry including metal, wood, and plastic products.

Ehrett joined Sherwin-Williams in 1932 after completing studies in automotive engineering at Bradley Polytechnical Institute and business administration at Lombard College, Galesburg, Illinois. During the war he won special recognition from both the Army and Navy for his work of national scope on aircraft and wood and metal ordnance equipment.

Sound Movie Shows Care of Airbrush

Recognizing the need for better training of distributor salesmen, the Paasche Airbrush Co., 1923 Diversey Parkway, Chicago 14, Ill., has just completed a sound slide film entitled, "The Service Angle." This 30-minute sound slide picture covers the subject of service for an airbrush to assure the user of getting the best service from it.

Users of spraying equipment may procure the film for showing by communicating with the Paasche Airbrush Co.

Plastics Glow in Dark

Monsanto Chemical Co., St. Louis, Mo., announces a new series of plastics from which can be fashioned street markers or door numbers that glow visibly six to eight hours after exposure to sunlight or other illumination.

Identified as polystyrene materials of "the 1200 Lustron series," they have an after-glow potency more than double that of any prewar phosphorescent thermoplastic, and are the outgrowth of extensive wartime research undertaken in the company's Plastic Division Laboratories at Springfield, Mass.

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Factories at
LOUISVILLE - NEWARK - DETROIT

Random Comment on the Industrial Scene

(Continued from page 11)

since the war. This is a definite indication that orders will not be placed on sight, regardless of size, design and quality.

The Chicago markets reported a record movement of merchandise. Another first-time-since-the-war was the disappearance of inflated orders by buyers in the hope that the manufacturers would ship a small part. Officials declare this market to be "the soundest" since 1942. Competition forced salesmen to go after business instead of just being order takers. Here also, quality goods took the lead, with low grade merchandise meeting real resistance.

The Grand Rapids market displayed more new merchandise than it has for the last six years. It is reported that attendance was good and sales satisfactory.

* * *

July Building. An increase in investment commitments for construction is revealed in tabulations of project contracts awarded in July in 37 states east of the Rocky Mountains, according to reports from F. W. Dodge Corp., a fact-finding organization for the construction industry.

The Dodge field staff filed reports on 28,734 projects reaching the contract-award stage in July. These projects have a total value of $660,254,000, representing a gain of 9% over the valuation of June 1947 contracts, but a decline of 8% from the total for July 1946. Nearly all districts showed an upswing over June 1947. In most areas, the July volume exceeded the total for July of last year.

More Oil Burners. Factory shipments of oil burners in June 1947, totaled 105,251 units, according to the Bureau of Census, Department of Commerce. These shipments were 6% above the 99,171 burners shipped in May, and three times the number shipped in June of 1946. Of the total number of oil burners shipped in June 1947, 97% were the residential type oil burners. Data for June were compiled from reports submitted by 163 oil burner manufacturers.

Interchemical Advances C. F. Kahnhauser

Interchemical Corp., Finishes Division, has appointed Charles F. Kahnhauser as sales manager of Metal Decorating Products in the company's Philadelphia District Office. This announcement as made recently by Jules L. Bauer, Divisional Sales Manager of Metal Decorating Products for the Finishes Division of Interchemical Corp.

A veteran of 31 years in industrial finishing, the popular "Charlie" Kahnhauser has hundreds of friends of long standing in the metal decorating field. He began his career in 1916 as a varnish salesman for the old Ault & Wiborg Co. of Cincinnati, now a part of Interchemical Corp. After 16 years in the middle west, Mr. Kahnhauser pulled up stakes to accept a territory in Syracuse, New York. Ten years later, in 1942, he was transferred to Philadelphia where his broad experience helped solve many metal decorating problems of the war years.

Cowles Detergent Conducts Metal Cleaning Clinic

The Cowles Detergent Co., 7016 Euclid Ave., Cleveland 3, Ohio, has been conducting a series of Salesmen's Clinics for Cowles Technical Men at the home offices and laboratories in Cleveland, Ohio.

The recent clinic concluded the Company's post-war refresher program for all members of the Metal Cleaner Department. All phases of metal finishing and cleaning were covered in detail and each Cowles representative has returned to his territory well equipped to handle current problems in this ever changing field.

Some Spraying Setups
YOU WANT TO AVOID

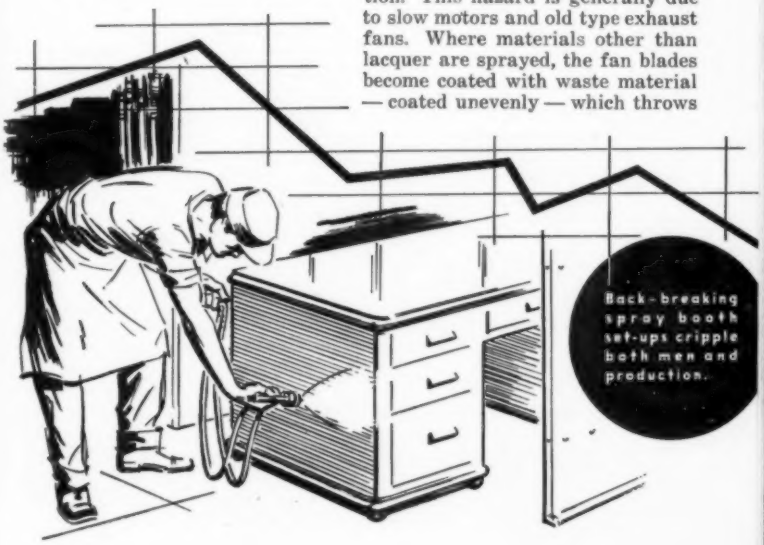
Strange as it may seem, some very bad conditions exist in and around spray booths. As a result one sees the amazing spectacle of real harm being done to workmen, products, the equipment and the firm's business. It makes you want to stop everything right away and remedy those conditions.

By W. C. ANDERSON

IN ANY Finishing Department one of the most important stations, yet in some cases the most neglected, is the spray booth and its equipment. I have seen sprayers working under very bad conditions. Manufacturers of spray equipment have developed the necessary units for perfect application of all kinds of finishing materials. Their engineers have given consideration to the comfort of spray operations to such an extent that end-of-the-day fatigue is almost eliminated.

Removal of Spray Fumes; Poorly Lighted Booths

Probably the most flagrant violation is inadequate fume elimination. This hazard is generally due to slow motors and old type exhaust fans. Where materials other than lacquer are sprayed, the fan blades become coated with waste material — coated unevenly — which throws



Back-breaking spray booth set-ups cripple both men and production.

the fan out of balance and causes burned-out bearings in the motor. The excess of fumes, unable to pass through the exhaust fans, envelope the sprayer and spread into the finishing room. This is detrimental to the health of all concerned.

Many spray booths are placed in the wrong position for natural light; they are dirty and dark. Due to the pressure of keeping up with production schedules, the spray operator doesn't have time to take care of his equipment. Several spray booth coatings now on the market are easy to apply. They can be sprayed on or brushed on and, when loaded with overspray, they can be quickly removed. Most spray booths should be cleaned at least once a week.

Electric lighting equipment should be inspected every morning. Some sprayers have helpers who may occasionally amuse themselves by spraying the walls of the booth and the electric light globes with material which casts a different hue on the work being sprayed. The man spraying lacquer shading stain, for example, will have a hard time trying to uniform the parts that need this stain. Due to the darkness of some spray booths the spray operator is obliged to stand within the booth to see whether he is spraying a wet coat of material. Even then he has difficulty in seeing what he is doing.

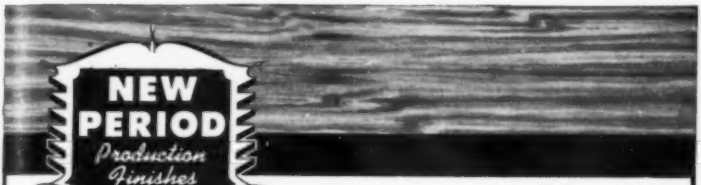
Uniform Air Pressure, and Clean Air

I have seen several makeshift contraptions fixed up to serve as air regulators. In one case when a sprayer wanted 35-lbs. of air to spray a non-grain-raising stain he tapped the small valve with a hammer until the right pressure registered. Being on the main air line which had a pressure of 100-lbs., every time he released the trigger of the gun the air pressure went back to 100-lbs. Every time he started to spray he had more pressure than he had bargained for. He couldn't figure out what made dry and wet streaks on the pieces he was spraying. He did not realize that the spraying pressure was not uniform.

The filtering of compressed air for the removal of water and oil and any other undesirable content is really a "must" in every factory. Many air filters are in operation but they are not all kept in condition to function properly. To find out whether there is oil in the line, examine the connections at the booth. Some air hose is so saturated with oil where it connects to the air line that oil bubbles out of the connections. Just imagine the amount of oil that is carried into the material stream as it leaves the spray gun.

You have probably been in factories where three or four spray booths were lined up in a row against the same wall. In one finishing room where this arrangement prevails I noticed that the last booth always lacked sufficient air pressure. Upon examination, I found that a small pipe line had been attached to a large size pipe between booths. This is what caused the trouble. Installation of a uniform size piping system cured this headache.

Many air compressors are overloaded trying to furnish air to departments other than the finishing room. This condition causes the air pressure to fluctuate while finishing materials are being sprayed. Naturally this results in poor work at times—when the pressure is too low or too high—but many who should know do not know what is causing the trouble. *(To page 96)*



BAKING ENAMELS · LACQUERS SHELLAC · ENAMELS FILLERS · SEALERS SUPPLIES · PRIMERS STAINS · SYNTHETICS VARNISHES

LABORATORY SERVICE

Most of the organic finishes sold on a bulk basis are custom built. This means they are especially formulated to meet the particular requirements of the customer. The variations are innumerable. They involve color, drying time and application to a finishing system or a finishing schedule.

Our laboratory service is highly geared to the individual requirements of each customer. Whatever your finishing problem may be you can expect prompt action and satisfactory service from our laboratory.

The complete New Period line includes sealers, gloss, semi-gloss, clear and pigmented lacquers. They are formulated for various methods of application and for any production setup.

A production sample will convince you of its superiority.

Our complete line of New Period finishes and our laboratory facilities are at your service. Write us!

NEW PERIOD Production Finishes

ESTABLISHED 1917

NEW YORK WOODFINISHERS' Supply Co.

109 IMLAY STREET BROOKLYN, N. Y.

Back Breaking Job in Bare Spray Booth

Watching a man spraying stain in a factory one day, I marveled at how loyal this man was to his firm, without the company executives ever realizing what a back-breaking job he had to endure all day long. His spray booth was set off in a dark corner. There was no table or lift inside the booth. To spray secretaries and desks he had to pull each one into the booth without the benefit of runners underneath. The feet of these pieces were fitted with metal domes to make them slide a little easier over the floor.

He would spray one side, hang up his gun, turn the piece around and spray the other side. He worked on each piece this way until it was completely stained. This constant tugging with each piece of furniture, bending down to spray the lower surfaces and straightening up to reach the top would try any man's patience. I asked him if he got tired doing that work and he replied, "I feel mighty low at five o'clock." The production schedule called for so many cabinets to be sprayed every day. An adjustable turntable would surely make that man happy.

Gravity-Feed Buckets; Pressure Tanks

Gravity feed buckets are still in use in some few shops but they are rapidly being replaced by pressure tanks or pumps. In some places where the gravity bucket is still used the ceiling is so low that the bucket hangs lower than the spray operator's head. This means that the spray gun is just a trifle lower than the faucet in the bucket. When the bucket is full, the material flows out rapidly, but as the bucket empties the pressure becomes less because the material has to go down and then up. This means that the sprayer has to slow down his strokes when the bucket is down to its last gallon.

Regardless of how little material is consumed each day, a pressure tank should be used. Where more material is used a pump can be inserted into the shipping drum. This saves a lot of time because the empty drum can be rolled away and the pump can be inserted into a full drum of material in a few minutes.

Spray Gun Fluid Tips, Needles and Nozzles

Different types of fluid tips, needles and nozzles have been developed to use on spray guns, for spraying different materials. The nozzles or spray heads have two or more air outlets to atomize the material. One time, while watching a man spraying lacquer, I noticed that the coating was heavy with orange peel effect. Examining his spray gun I found that he had a combination of parts contrary to the spray equipment firm's instructions. The spray operator admitted that he had the right type of gun but it was too slow so he took it home and reamed it out. He certainly ruined it; now the material flows as though it were coming from a garden hose.

The majority of factories have good equipment but a lot of it is misused through gross neglect and ignorance. The smaller factories —especially those housed in old buildings—would get greater production and better quality work if they would put in modern equipment. Labor turnover would be less and the spray operators would stay young longer, and would not be "feelin' so low" at the end of every working day.

You'll never believe it, but the fish has surface coating problems, too. His skin is equipped with glands that secrete film to keep water out. If this coating is rubbed off, the fish falls prey to many skin diseases.

If your problem is surface coatings, use quick-drying lacquer. It air-dries fast, without costly drying equipment. Your lacquer supplier would like to tell you about lacquer's other qualities—its durability, toughness, and beauty—in more detail.

How Dry I Am!

COMMERCIAL SOLVENTS
Corporation
17 East 42nd Street, New York 17, N. Y.

CSC makes solvents and plasticizers, but is not a lacquer manufacturer.

Letters from Readers

Silk Screen Suppliers

It would be greatly appreciated if you would supply me with the names and addresses of a number of silk screen suppliers.—Claes L. Axell, Halsingborg, Sweden.

There is quite a list of them—and we are submitting this to you by letter.—ED.

Art of Picture Framing

We have been contemplating the publication of a book dealing with the Art of Picture Framing, and are interested in locating an authority capable of handling the subject.

If there are any authorities on this subject that you can recommend, we would greatly appreciate having their names and addresses.

As you probably know, picture framing is a past art and the true craftsmen of the art are few and far between.—X. Co.

Is anyone interested?—ED.

We Have Flock Adhesive

In reference to X. Co's. inquiry, published on page 100 of May 1947 issue of INDUSTRIAL FINISHING, will you kindly advise the X. Co. that we can supply the adhesive for flock as they requested?—John K. Harris & Co., Cleveland 14, Ohio.

Flock Finishing

We take your magazine INDUSTRIAL FINISHING regularly and read with interest the various articles contained in it. May we request you to obtain for us tear sheets of the article on airplane interior treatment with flock which, we understand, appeared in the January 1947 issue of the magazine and which, unfortunately, we did not receive? Or better still, could you arrange to send us a copy of this issue?

The reason we are anxious to read this article is that we have just had an inquiry from the Ceylon Government Railway for finishing the interior of some of their coaches in flock and, no doubt, information contained in the article will be of value to us.—P. & D. Co., Colombo, Ceylon.

Copy of January 1947 issue is being mailed to you.—ED.

Bronze Powders Wanted

I would appreciate it if you could furnish me a few addresses of manufacturers of gold, bronze and aluminum powders.—G. F. Co.

There are several. In a letter to you we are naming a few of them.—ED.

Machines to Rub Filler

Please furnish us with the name and address of some manufacturer who makes air-operated machines for rubbing filler.—M. Furn. Co.

Two manufacturers of rubbing machines driven by compressed air advertise their machines in this magazine, but whether these machines can be used effectively to pad in and rub off filler, we are not sure. In a letter we are submitting their names and addresses.—ED.

Hot Lacquer Article

We will be very pleased if you could send us the issue of your magazine INDUSTRIAL FINISHING, published in 1939, containing an article on "hot lacquer" by C. W. Simms.—S. A. Metagra, Gand, Belgium.

We happen to have a reprint of this article and are sending it to you.—ED.

Flock Coating Machines

Could you please advise us where there might be procured a machine for applying flock on fabrics? A few of our customers are looking for such a machine but have not been able to locate such a device up to this point. —S. P. & W. Co.

As a subscriber of your magazine for many years, we are writing to you in order to hear if you can give us closer information as to the application methods of flock. We are interested to come into contact with a

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Chicago 16, Ill.

W. H. HALL
182 Jarvis St.
Toronto, Ontario

maker of a machine for applicating flock on paper for large production. We have an idea about this being possible to apply with static electricity. We should very much appreciate it if you can help us.—A. N. & S., Malmo, Sweden.

Leading makers of spray guns in this country have developed equipment for spraying flock. For information on other apparatus for applying flock, we are referring your letter to some of the flock manufacturers.—Ed.

Spray Gun Gaskets

P. S.—Just a helpful hint. I find the rubber gaskets for the spray gun must be glued to stay in place. LePage's glue does the trick. Lacquer, enamels, and thinner will not cut LePage's glue.—C. J. Powers, Chicago.

Electrical Conducting Paint

Can you give us some information, or refer us to the manufacturer of a metallic paint which is an electrical conductor? We believe this was mentioned in your publication sometime ago. Any information would be appreciated and helpful to us.—T. Co.

We have on our reference card the following names of concerns who have told us that they can supply such a material: Interchemical Corp. (Finishes Division) Newark F, N. J.; E. I. duPont deNemours & Co., Inc., Ceramic Products Div'n., Electrochemicals Dept., Wilmington 98, Dela.; Titanine, Inc., Regolac Industrial Finishes Div'n., Union, Union Co., N. J.—Ed.

Mechanical Striper

Do you know of a good mechanical striper? We have one of the finest stripers which we purchased from a friend of the inventor. It is a miracle worker, but we fear that some day it will be appropriated by someone or lost by a careless operator. We want at least two in reserve of this type.

We have five different types of stripers, but none come up to this one. We have spent time tracing information about this striper but without avail. What makes this striper the machine it is, it has an interior wheel which contacts the color reserve and then passes the color to an outside wheel, along the line of an ink fountain on a printing press.—C.E.M.

We do not know which company's striping tool it is that you like so well. In a letter we are giving you the names and addresses of several firms that make striping tools.—Ed.

Electrostatic Spraying

I am interested in the article on Electrostatic Spraying which appeared in the May, June or July 1946 issues of INDUSTRIAL FINISHING, and would appreciate having you forward me a copy.—R.D.

The article appeared in May issue. A reprint of the article is being sent to you.—Ed.

Tumble Finishing

Please send to us, at your early convenience, a copy of the article on Tumble Finishing of small wood products by Mr. Fairburn.—S.E.

We are interested in any information that you may have available, or suggestions where we might obtain information on tumbling, tumbling equipment, and tumble finishing.—Custom W-W. Co.

We are sending you a reprint of an article we published on this subject.—Ed.

Metal Cleaner That Isn't Intoxicating

Will you please advise us if you now have, or could manufacture for our use, a type of chemical which would serve the same purpose as trichlorethyiene, which we are now using in our metal stamping plant?

We are being increasingly troubled with an inmate problem here, which arises from some of the inmates inhaling the trichlorethylene, thereby deriving an intoxicating effect. Our tank must be kept open during the license-plate production, making it almost impossible to avoid this contingency.

We would welcome a visit from one of your chemists to inspect our equipment, manner of production, etc., with the thought that you may be able to produce a chemical which will give us the same satisfactory results we have with the T———, but which will eliminate the possibility of inmate help using it for intoxicating purposes.—M. S. I.

Your problem is being referred to metal-cleaning specialists.—Ed.

Marking and Imprint Devices

A new brochure describing 22 different industrial marking and coding machines has been issued by Adolph Gottscho, Inc., One Hudson St., New York 13, N. Y. Illustrations of each machine in operation are accompanied by explanatory information about their applications and uses.

New Booklet on Pittsburgh's Aluminum Paint and Paint Liquids!

IN this new folder Pittsburgh's Aluminum Paints and Paint Liquids are fully described with many practical suggestions for their application.

These finishes produce uniform brilliant coatings with excellent durability. They dry quickly and show a minimum of dirt.

Pittsburgh's Aluminum Paint and Silver Chrome offer the convenience of paints ready for use. They have excellent hiding qualities and the liquid is especially formulated to retain the brilliance and leafing of the aluminum pigment upon aging.

Pittsburgh's Aluminum Paint Vehicle is furnished for those who wish to mix vehicle and pigment on the job.

Write today for Pittsburgh's new booklet which fully describes these Aluminum finishes.

PITTSBURGH PLATE GLASS COMPANY

Industrial Paint Division, Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Houston, Tex.; Los Angeles, Calif.; Portland, Ore.; Ditzler Color Division, Detroit, Mich. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio.

PPG **PITTSBURGH** *Industrial* **FINISHES**

PITTSBURGH STANDS FOR QUALITY PAINT AND GLASS

Questions and Answers

Fruitwood Finish

Referring to B. & B's question under the above title, on page 86 of June 1947 issue, this finish (for maple and birch) simulates heartwood and clear running together. This finish could be put on maple and birch, but it would be necessary to tone the wood before applying the stain.

I have on hand an original fruitwood chest of drawers which I would be very glad to show you or anyone who is interested in developing this particular finish. On the other hand, if we are too far away, if you will send me sample pieces of your wood I will try to match this with the original fruitwood shade and give you the schedule.—A. G. ROSSNER, B & R Finishing Co.

Finish for Cypress

Referring to NHA's inquiry under the above title, on page 88 of June 1947 issue of this magazine, I had some experience with this type of finishing (cypress terrace furniture) in Florida before the war. Since the wood has many shades of color in the varying grain, and as this is distinctive, my experience led me to finish cypress without any staining or filling.

Using a clear lacquer sanding-sealer, the wood was given two full coats. After one hour to dry, the surface was water-sanded with No. 280 sandpaper. Two or three wet coats of a full-gloss clear wood finishing lacquer were then applied. After thoroughly drying, the surface was water-rubbed, using No. 3/0 or No. 4/0 pumice stone, after which it was waxed.

To my mind this is one of the most beautiful woods in color and grain that I have ever seen, and the clear lacquer finish added to its beauty.—JOHN W. SWIFT, Paint Spray Engineer for A.B.S. Co.

Treatment for Pinholes in Mahogany

In November, 1941 issue of INDUSTRIAL FINISHING, I saw an article, "Pinholes in Philippine Mahogany," written by the Liquafill Mfg. Co. I have been working with very porous mahogany which leads me to believe that it is Philippine mahogany. The blistering condition is present in the lacquer finish.

Can you supply me with the address of Liquafill Mfg. Co. so that I can contact them for information regarding the chemical solution which is capable of coagulating the hygroscopic matter in the pores of the wood?—H. K. D.

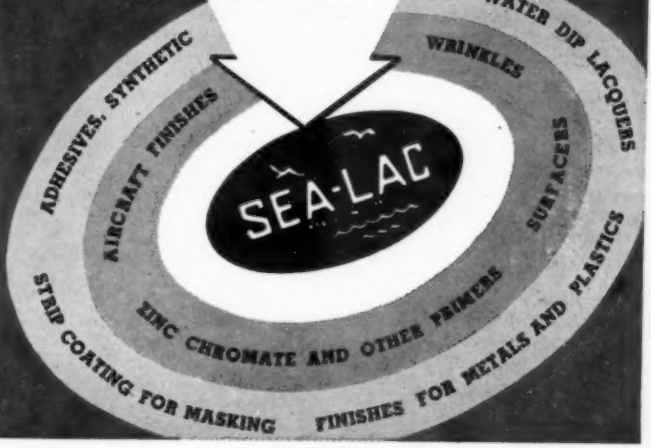
We have referred your inquiry to Liquafill Mfg. Co., 823 Richard St., Dayton, Ohio, who writes as follows:

"The material we recommend is called Glue-Life No. 24 and is used with animal glue of good quality (Peter Cooper ground animal glue

AIM FOR THE RIGHT FINISH

Time and again, customers have told us they'd lost hope of finding a desired finish — until they found us! Our files have proved an unfailing source for many manufacturers. It may well hold the answer to your problem. If not, there's our research laboratory — with a high score for bulls'-eyes.

DURALAC CHEMICAL CORPORATION
Lister Avenue
Newark 5, N. J.



for instance) in the manner outlined in a leaflet which we are sending you. The resultant Liquafill size coagulates the hygroscopic matter in the pores of the wood. Furthermore, since the war, Glue-Life No. 24 has been improved through the addition of a chemical compound that increases its wetting-out properties; allowing for instant penetration of the sanded pores and a cohesion of the Liquafill size to the sanded surface."—ED.

To Measure Flow Of Lacquer

For some time we have been trying to procure a production meter for measuring the flow of lacquer, but have been unsuccessful. The meter we have in mind would have to be installed on a 50-gallon drum or between the drum and the air gun, and should be calibrated in 1/100 of a gallon. This calibration is necessary for arriving at cost.

We will appreciate your furnishing us with the names of various companies who make such equipment.—L.N. Co.

Before the war we manufactured a meter for this purpose and sold several of them, but production was suspended during the war.

We have not been able to resume making them since the war because of the pressure of other business and because the demand for this meter, for use on finishing materials only, is not sufficient to warrant the special production problems involved. We are now building meters which will actually measure the finishing material with equal accuracy to our prewar meters, but the registers now available on the meters are not graduated into small enough units to meet your specified requirements.—BUFFALO METER CO., Buffalo, N. Y.

We keenly appreciate your interest in the problem of measuring lacquer for paint spraying operations. Due to the fact that the operation requires such small quantities of lacquer, it is not practical with present available metering equipment to measure the amount.

The problem requires a meter of very small capacity, and the present demand for such a meter does not justify the expense involved in manufacture.

We do manufacture meters for a great number of commercial liquids with meter capacities ranging from 10 to 300-gpm. The metals used in the Bowser meter are quite variable due to the many limitations that certain metals have with certain liquids.

The application in use of Bowser meters are many, but like all mechanical devices, meters have their limitations beyond the scope for which they are manufactured. Meter measurement for spray painting is not practical at the present time.—BOWSER, INC., Fort Wayne 2, Ind.

Can some reader tell us anything more about a meter for this purpose—and who makes it?—ED.

Not Enough Gloss to Varnish Finish

I am a foreman of the finishing department of a box-making factory. Our main line is fine aromatic cedar boxes. My trouble is the finish on this cedar.

At the present time I am using two coats of shellac and one of var-

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MICRO-CUT FIBERS

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STYLON Micro-Cut Fibers bring to industrial finishers a new standard of excellence for richness, density and uniformity of flock coatings.

Applicable to all quality flock-coating operations, STYLON Micro-Cut Fibers are cut to precision length in machines designed by us to meet even the severe requirements of electro-coating.

When applied by mechanical methods, STYLON Micro-Cut Fibers yield surprisingly improved coatings with superior decorative and functional properties. Write for booklet and samples.

BEHR-MANNING (Division of Norton Company) TROY, N. Y.

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nish, sanding my second coat of shellac with No. 5/0 sandpaper. The trouble is, I am not getting enough gloss to suit our trade. The varnish I am using is a high-gloss type, but it doesn't seem to give us enough gloss.

The shellac we are using is a 5-lb. cut. This we cut 50/50 with alcohol. We do not sand the first coat, but we do sand the second coat. This is followed by a varnish coat. The varnish we are using is a fast drying material, which it must be, as the boxes are packed and shipped the next day.

I have tried several different varnishes. They seem to be too slow in drying, or when they dry they leave a dull finish. We use the spray method for finishing.—A.E.J.

It would be important to note that the gloss of a synthetic surface coating is related to the refractive index of its components; that is, the relationship of a resin-oil mixture. Therefore it would be wise to select a coating of resin-oil mixture formulated to obtain the gloss desired. So much for the technical angle.

I suggest you look to the ventilation of your drying room. Improper ventilation, drafts and excess humidity will cause loss of gloss; also, the evaporation of the thinner produces currents which will cause surface irregularities if the solvents are not properly balanced. The wrong type of thinners will cause vortex movements upon evaporation, which lead to various types of gloss-reducing surface defects. For thinning synthetic varnishes I would always prefer xylol where gloss is desired.

I would use only one coat of shellac. Sand the shellac coat thoroughly. I would also experiment with different types of lacquer sealers for use under varnish.

There is a possibility that the shellac is causing the trouble, especially by using two coats. Preferably, the first coat should be no more than a wash coat and then sanded smooth. Also, the second coat should be sanded.

A little experimenting along these lines should eliminate your troubles. You should also obtain samples of varnish from various companies and run tests with shellac and sealer as undercoats. Too many coats in one day will also cause loss of gloss.—FRED R. BOYNTON.

As I read your question I wonder if you are confusing gloss with build. If gloss is really the problem I can't understand why your present supplier or the other finishing houses whose material you have used, can't remedy the situation. I am inclined to believe that gloss is not the trouble, but that the finish penetrates into the wood, thus not giving the desired build.

You mention that you have tried several different varnishes but that they are too slow in drying, or that when they dry they leave a dull finish. I would like to ask if some of those varnishes, even though they dry slowly, have sufficient gloss. The finishing procedure—using two coats of 5-lb. cut shellac, reducing same with equal parts of alcohol, and following this with a coat of varnish—should produce a finish with good build and high gloss, even on a wood as absorbent as cedar.

I believe that to answer your problem satisfactorily would necessitate an inspection of your finish-

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ing materials and your finishing room. I don't believe it can be answered by letter. — RAYMOND ADAMS.

Bleach Red Mahogany for Blond Finish?

We are a small shop doing upholstering, repairing and refinishing of furniture. We have a problem that comes up frequently and we are wondering if you can help us out. Is it possible to bleach a red mahogany finish on a piano, so the piano can be refinished in blond color? If so, will you please advise us the proper procedure?—C. Furniture Hospital.

There is no way of knowing in advance whether or not a red mahogany stain will respond to bleaching. If the color was obtained by the use of dyes, it may consist of two or three of the thousands that might be used, some of which do not respond to chemical bleaches. Some dyes can be bleached by one material but not by another. Also, the color may be obtained by chemical treatments which may or may not respond to bleaching.

The only way to determine whether a red mahogany finish can be bleached out is to try it. Select a small, inconspicuous portion of the surface and remove the finish with paint and varnish remover. Then wash with lacquer thinner. Sandpaper the place lightly so the bleach can penetrate the surface.

First of all, try a 2-solution peroxide-alkali bleach. There are a number of these on the market, some advertised in this magazine. This bleach should be effective in most cases. If not, try a solution of one or two ounces of potassium permanganate in a gallon of water. Allow this solution to set one-half-hour, and clear with a solution of two to four ounces of sodium bisulfite in a gallon of water. Sometimes a hot saturated solution of oxalic acid in water will do the job.

After the wood is bleached, sponge the surface with clear water and allow it to dry. Sandpaper carefully and washcoat with thin shellac or lacquer sealer. Some finishers prefer to add a little color (as non-grain-raising stain) to this washcoat. Sandpaper the surface again and fill with a very light brown filler. The color of this filler should be just a trifle darker than that of natural filler. Then follow with lacquer sealer and lacquer.

If your tests indicate the finish can be bleached out, then your procedure is outlined above. If bleaches do not seem effective, and the construction is all solid wood (no veneer) then you have the possibility of taking the case apart and sanding down all surfaces through the point of deepest penetration of the stain. The wood can then be bleached and finished.

Still another alternative, which you might try, is to remove the old finish and as much of the stain as you can. If the color is not light enough, washcoat the surface with a very thin coat of one part of white lacquer and five or six parts of lacquer thinner. Do not apply enough to hide the wood or obscure the grain pattern, but just enough to lighten the color a little. Too much white will give an artificial "painted" appearance.

Then sandpaper the surface and fill over this washcoat, following with lacquer sealer and water-white lacquer. This method requires some skill, so I suggest that you try it on some scraps of lumber before attempting it for the first time on a piano.—R. WAMPLER.

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STILLE-YOUNG Lacquers, Stains, Fillers, Sealers are now keyed for the greatest competitive market of all times—with greater clearness of tone, ease of application, beauty and durability of results.

An opportunity for an interview or a demonstration will be mutually profitable.

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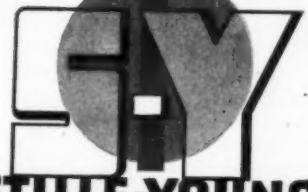
KEEN-LAC

Excellent foundation coat for Lacquers, Enamels, Varnishes.

Takes heavy reduction for spray application.

Also can be used for a tough, durable top coat, resistant to scuffing, bruising, or scraping.



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Materials Supplies Equipment

Coating for Spray Booth Interiors

What is said to be "a new quick way to eliminate all the commonly accepted problems of protecting the interior surfaces of paint spray booths," has been developed and is now being offered by Maas & Waldstein Co., 433 Riverside Ave., Newark 4, N. J. Named Booth Coat No. 19, this creamy compound is non-inflammable, non-oily, non-caustic, and non-corrosive.

Booth Coat No. 19 can be applied by spraying (thinned with water), brushing or troweling. When the coating of No. 19 inside the booth becomes so covered with overspray that cleaning is necessary or desirable this loaded coating can be easily stripped off in sheets, with a putty knife, scraper or similar tool. It leaves a clean surface underneath.

Ransburg Electrostatic Safety Device

The Harper J. Ransburg Co., Indianapolis 7, Ind., announces an additional safety feature for its electrostatic spray coating and dip-detearing processes.

The new safety control is an electronic "spark-guard" so sensitive that it can be set to anticipate an accidental "short" and de-energize the electrostatic field before a spark-over develops.

The new device will automatically stop the equipment should a piece accidentally approach the discharge electrode, either from swinging, from falling, or from some other dislocation.

Although the electrostatic spray process already is in use in a score of industries and has created savings averaging 50% through its "guided-spray" principle, the added protection afforded by the new control is expected to widen still further the use of the process.

The new protective control will be supplied to all present users of both Ransburg electrostatic spray and electrostatic detearing equipment, and will be incorporated into all future installations.

Water-Shedding Liquid for Drying Metals

Enthone, Inc., Dept. IF. 442 Elm St., New Haven, Conn., announces the development of a new product called "Hydrex," a water displacing liquid.

This product is a thin mobile liquid that sheds water from the surfaces of metals. It has high penetrating power to enable it to displace water from blind holes and crevices. After the water has been displaced, the work is removed from the liquid and the solvent evaporates, leaving a water-free surface with some rust-inhibiting properties.

The liquid is being used for drying jewelry items which contain many recesses which formerly required alcohol or saw dust drying. This liquid can be used for drying steel after pickling, and is partic-

Better

RANDOLPH FINISHES

through Research

Research has always been regarded as the most important single function of the Randolph Organization. Great care has been exercised in assembling a staff of expert technicians and large sums of money invested in the finest modern laboratory equipment and facilities.

This policy has made it possible to constantly improve established Randolph products and to develop many new scientifically correct finishes for special and exacting requirements.

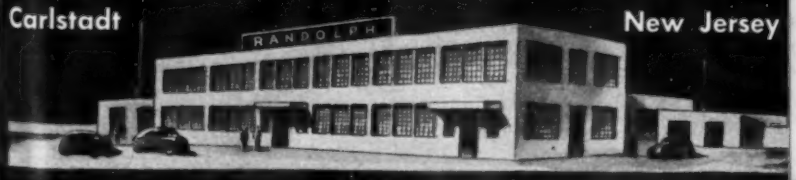
The soundness of this policy is proved by the ever increasing demand for Randolph finishes which required a 25% increase in our plant facilities last year and a further increase of 25% which is now being planned.

We invite you to submit your special and difficult finishing problems to us.

DOPES • LACQUERS • ENAMELS

RANDOLPH PRODUCTS COMPANY

Carlstadt New Jersey



ularly valuable for drying in the presence of high humidity when rusting occurs. The liquid displaces the water from the surface of the steel and the thin film of material remaining acts as a rust-inhibitor without detracting from the appearance of the work.

Quick, Non-Poisonous Paint Stripper

The Chemco Products Co., Inc., 1059 E. 76th St., Chicago 19, Ill., announces "Unisol Liquid," a new development for stripping paint coatings from painted wood or metal parts. This new solution was developed to provide a fast-acting, non-toxic stripping and cleansing agent. Five minutes immersion in this non-inflammable solution leaves any painted or enameled part completely cleaned, ready for repainting.

"Unisol Liquid" will not harm operators' hands or clothing and will not react on or affect any metal, ferrous or non-ferrous, glass or wood. No heating is required. This stripper can be reused by merely filtering and removing paint film from the tank of used stripper.

Removable Protective "Skin" for Bright Metal

"Redskin" is a new protective, liquid-plastic coating for polished or bright metal. It was recently developed by Dennis Chemical Co., 2700 Papin St., St. Louis, Mo.

A coating of the material is applied by spray, brush or dipping on bright metal surfaces. It dries quickly, forming a tough, elastic film that is impervious to rust, chemical reaction, smears, or normal handling. The red color instantly warns against promiscuous rough handling of bright or polished surface.

When the coating is to be removed one edge is picked up with finger nail and the coating is peeled off the entire surface in one continuous strip. Parts protected with this new coating may be completely fabricated before removing the protective "skin." Assembled items may be coated for storage or for protection in shipping. The coating is not affected by atmosphere or climatic changes.

Shelburne Spray Gun

New-type spray nozzle that will handle many kinds of compounds from shingle stain to asbestos fibered aluminum paint, are now available on the Model 45-J hand spray gun and the Model No. 8 Pole gun manufactured by the A. Shelburne Co., 739 Ceres Ave., Los Angeles, Calif.

The unconventional design of the new Shelburne nozzles, interchangeable in a matter of seconds from pole gun to hand gun, make it possible for the guns to handle fiber impregnated compounds. The

Shelburne's new Model 8 Pole gun available with three interchangeable nozzles for spraying heavy materials.

This man wants samples of your unfinished product

e may well ask you for samples, as ell as complete data on your finishing partment—in order to help you meet oduction schedules!

He'll bring your problem to a team Zapon specialists for development of correct formula out of their ex- rience in laboratory and production e.

Then the real test comes on your oduction line! You see for yourself at the recommended finish is more onomical, more efficient and more tisfactory for *your* product under ur conditions.

The finishing material itself is a small part of your total manufacturing cost—yet it can play a big part in control of output, sales quality and total manufacturing cost!

So you see this Zapon man's job is not so much to sell you as to *serve* you! He figures your cost per finished product, not per gallon of the finishing material!

Duranites, Zaponites and other well known finishes are now available for shipment in days—not weeks.

For service on finishes, write or wire Zapon Division, Atlas Powder Company, Stamford, Connecticut, or North Chicago, Illinois.

ZAPON
REG. U. S. PAT. OFF.

zapon production finishes

nozzle opening is round in cross section, yet actually it delivers a fan-shaped spray that is evenly distributed over a wide oval without use of side wings. The gun delivers an even free-flow of material without clogging—and there is a minimum of overspray which virtually eliminates damage to nearby objects.

New Sealing Tape Has Many Uses

Nu-Chromseal tape, a versatile improved form of Chromseal aircraft sealing tape, developed by Pittsburgh Plate Glass Co., (Pittsburgh, Penna.) research chemists for wartime requirements, is now offered for a wide range of industrial applications.

Nu-Chromseal, available in three thicknesses, is not affected by gasoline, oil or water and may be used where required baking temperatures run as high as 375° F. It is adhesive on both sides, clean to handle and rates high in dielectric values.

Chromseal was used during the war for sealing pressurized cabins, fuel tanks and plastic enclosures. Nu-Chromseal, in addition to numerous aircraft applications, is advantageous for automobile weatherproofing, boat and container sealing, metal cabinetery, gaskets, glazing and insulation purposes.

Improved Pattern Lacquer

Development of a new pattern lacquer for use by the foundry industry is announced today by The Glidden Co., 11001 Madison Ave., Cleveland, Ohio. It is used for the perservation and identification of wood pattern. A coating of this material provides a smooth surface to which foundry molding or core sand will not adhere. It offers excellent resistance to water, oil, kerosene, heat and abrasion, and does not become brittle with age or usage.

Foundrymen who have helped with Glidden's extensive 2-year tests of the new poduct report the lacquer causes easy and smooth release from hot molding or core sand and reduces patching. It is made in all colors which the Foundrymen's and Pattern Makers' Association has standardized—clear, clear orange, yellow, vermillion and black. Luster is medium gloss. The coating air dries in 15 minutes over wood and also over the wax fillets which are used to smooth and fill corners in the patterns.

Wetter Water for Fire Fighting

American - LaFrance - Foamite Corp., Elmira, N. Y., announces a new product called "Pentrate" for making water wetter. As little as 1% of Pentrate added to ordinary water gives the combined solution speedy penetrating and spreading qualities much superior to water itself. The treated water is more effective in fire fighting. When applied on a stubborn, deep-seated, smouldering fire, it gets to the heart of the fire in a hurry.

Pentrate is no more injurious to metals or wood than water itself. It has even less corrosive effect than water and can be used effectively with salt water or calcium chloride solutions.

Ordinary water has a surface resistance, as evidenced by rain drops on a window pane, or morning dew which is held in almost perfect globular beads of water. The surface tension holds it from

You can't judge a book by its cover, but buyers are quick to judge and choose the product with a Pratt & Lambert finish.

PRATT & LAMBERT-INC.
Industrial Finishes
NEW YORK BUFFALO CHICAGO
FORT ERIE, ONT.

flattening, spreading out, or penetrating freely.

Adding 1% of Pentrate has the effect of freeing the surface tension and allows the globule to spread out in all directions and cover more area.

Pentrate, therefore, makes water wetter by giving the water a better chance to spread, to penetrate and to soak into an object on fire; to penetrate deeply into bales of cotton, waste, mattresses, overstuffed furniture, textiles, coal piles, etc.

Strip-Off Protective Film

Dyna-Flex 2020 is a liquid material that can be sprayed on surfaces to form a thin protective film which gives a perfect seal while the part or product is in storage or in transit. It adheres with sufficient strength so that normal mechanical abrasion or abuse does not fracture it. Adhesion, however, is so controlled that the complete film may be readily stripped with no resultant damage to the protected surface.

It is available in clear or colors. Product of Merchants Chemical Co., Elm Court, Stamford, Conn.

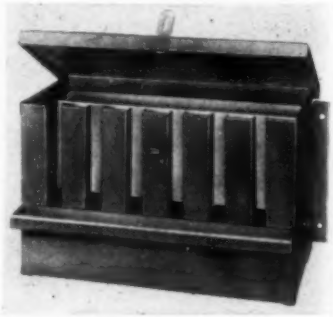
Permanent Ink That Sticks to Glass

The Stewart Research Laboratory, P. O. Box 173, Benjamin Franklin Station, Washington, D. C., announces that it has available a supply of an unusual ink which is non-corrosive, non-poisonous and non-inflammable. It will adhere to glass, marble, china, porcelain or ceramics. It may be applied with an ordinary writing pen or fine brush. After the ink has dried, it is not affected by any of the common laboratory solvents. It also resists the action of severe corrosive agents. The permanency of the ink can be increased by warming the ink after it has dried.

Spray Gun "Soaker"

The Protectoseal Co., 1920 S. Western Ave., Chicago 8, Ill., has developed a container especially designed for storing spray guns when not in service. Slots in front permit hose to remain connected to the guns, thereby keeping them ready for instant use.

The nozzle tip of each gun rests in solvent which is kept at a constant level by a reservoir inside the tank. Replenishing solvent in reservoir presents no problem and the tank is easily cleaned by opening a drain cock at the bottom.



For storage of spray guns.

This container is designed to provide efficient "freeze-free" storage for all types of spray guns and at the same time afford a sturdy enclosed place for the necessary solvent. It is available in various lengths, depending upon the number of spray guns to be stored, and can be mounted on the wall, post or side of a spray booth.

For Beauty

Her make-up requires a base just as the wood-working industry needs fillers for beautiful—durable finishes.

RAPIDRY FILLER

a product developed in the laboratories of this company—is as revolutionary as the atomic bomb. It is a speed filler — first in the field to satisfactorily and dependably fulfill all the functions of conventional oil fillers — plus drying to the finishing point within a half hour. It fills, penetrates and prepares surfaces, for perfect bonding of the finishing coat and requires no special thinner. Rapidry Filler is the result of long research — and is first in the field to stand up under actual production conditions.

We invite your inquiries. Samples on request.

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THE GILBERT SPRUANCE CO.

RICHMOND AND TIOGA STREETS

Philadelphia 34, Pa.

Alkali Resistant Paint

An alkali resistant enamel for use on industrial machinery, where cutting compounds and oils saponify regular paints, has been developed in the Paint Division laboratories of the Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh 22, Penn.

Developed for applications where alkaline conditions cause regular machinery finishes to lose color, become brittle and generally deteriorate, the new enamel employs a properly plasticized rubber-base vehicle, which gives it satisfactory adhesion and flexibility. A special green pigment that is not affected by alkali produces the same shade of Vista Green which has become so popular and useful in Pittsburgh's "Color Dynamics" system of painting.

This enamel is claimed to be useful for abnormal applications in most conditions of alkali, up to 10%. "Soakers" and washing machines in bottling plants, valve and crankshaft grinders and lathes are typical usages for the new coating.

"Speedtec," Quick Air-Dry Synthetic Enamel

A new product of the W. P. Fuller & Co. Industrial Finishes Division, 301 Mission St., San Francisco 19, Cal., is "Speedtec," a quick air-drying synthetic enamel with a wide range of potential applications.

Speedtec is recommended for painting tractors, earth-moving equipment, toys, novelties, garden equipment, pumps and machinery —where a quick dress-up is required and for many other products.

The enamel dries tack-free in 20 minutes and print-free overnight. It may be applied by spraying or dipping. Brushing is recommended only for touch-up work. Thinning is done with Synal thinner.

W. P. Fuller & Co. maintains industrial offices and branches in principal cities throughout the West.

Color Identifies Different Fire Extinguishers

Color is being used to save precious seconds when a fire starts. The Pyrene Mfg. Co., 560 Belmont Ave., Newark 8, N. J., has adopted a color scheme to distinguish different types of fire extinguishers. These colors have been selected to provide strong contrast for instant, positive identification. They are:

Bright Blue—Soda-acid and cartridge-operated water-type. For Class A fires (wood, paper, textiles and other ordinary combustibles) in locations not subject to freezing.

Bright Red—Foam; all types of foam extinguishers and foam-making equipment. For Class A and Class B (gasoline, oils, lacquers and other flammable liquids) fires.

Dark Green — Pump tanks and cartridge-operated anti-freeze extinguishers. For Class A fires in locations subject to freezing.

Reddish Brown—Vaporizing Liquid. For Class B, Class C (electrical equipment and wiring, calling for a non-conducting extinguishing agent) and small Class A fires.

All nameplates, ringcaps, and handles are painted with identifying colors; shipping cartons and recharge packages in new checkerboard containers also incorporate color identity.

Pyrene is following the example used more and more by industry to use color to convey quick mes-

sages to workers. In the past there have been cases of fire being spread by an excited workman using the wrong extinguisher. This new method of identification minimizes such chances of error. It is hoped that this color-identification scheme will become standard for all extinguishers. Such a simple expedient can save lives and property.

Spray Gun Nozzles

SPRAY GUN nozzles play a large part in the production of a good finish. The same nozzle that works perfectly for spraying an undercoat paint will not necessarily do so well for spraying a a top coat of finish. Prime coats usually have more pigments than finish coats, and it is not advisable to have high pressure on the pressure tank when spraying them. More compressed air will be needed to atomize the material—and compressed air has a tendency, under high pressure, to force the heavy particles in the primer out of suspension.

It is advisable to use a material nozzle with a large enough orifice to pass the desired amount of primer at low pressure. The air cap or atomizing nozzle should have holes or slots to "fan" the primer, depositing an even wet film. A partially dry film, applied as a fine spray, results in poor adhesion.

The finish coat does not have the same percentage of solids as an undercoat, therefore it passes freely through a smaller material nozzle orifice. The thinner stream passing through the small orifice makes it easier for the atomizing air to break it up into small particles. An atomizing nozzle or air cap, correctly drilled for finish coats, can apply a thin film of material—guaranteeing a uniform gloss and a saving of material.

The smaller material nozzles will deliver one quart of material in two minutes and 20 seconds; and a medium size nozzle will deliver one quart in 32 seconds at low material pressures, showing a wide range of delivery.

Many atomizing nozzles or air caps are designed to produce a fan spray with a heavy center for lapping; others give a spray that has a thin center and heavy edges for articles with rolled edges or lips; and there are still others that produce a fan spray of an even width throughout its length. When low atomizing pressures are desired there are internal mix nozzles; that is, the material and air are mixed inside the atomizing nozzle or air cap.

In parts of the country with which I am familiar (Central States), internal mix nozzles are not widely used for standard production. Some spray painters say there is a tendency for the paint to build up on the edges of the nozzle, and this must be cleaned off frequently. Perhaps there are ways to reduce or overcome this objection.

One could not expect to use the same nozzle for spraying an automobile fender as is used to spray cobwebbing material on the inside of a tobacco-curing barn, although the same spray gun may be used. It is just not practical to try to spray two different types of paint on standard production work with the same nozzles. Check with your spray equipment supplier and obtain his recommendations. It will pay big dividends in saving of material and speed of production. —ENGINEER.

Dedicated to

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FINISHINE LAB

627 Tallman Syrac

to Finer Finishing

The art of finishing, repairing and restoring rare and costly woods, porcelains, marble and other objects of art — the science of high-quality commercial finishing — both are presented clearly and thoroughly in this beautiful new 20-page brochure now coming off the press.

Illustrated are many interior and exterior details of English Manor, home of E. W. Hagadorn, president of Finishine Laboratories, Inc. The Manor, which serves as a proving ground for Finishine products, is furnished with rare antiques, including the Hagadorn Collection of Dresden china. Many of these fine pieces have been finished, restored or repaired with Finishine products as described in this brochure. The famous Finishine School for Professional Finishers is also conducted at English Manor.

This new brochure will prove to be of inestimable value in the field of practical, high-quality finishing. Copies will soon be mailed to the trade throughout the country. If you are not on our mailing list, write on your business letterhead for your FREE copy. It is your handbook for finer finishing, more artistic restoration—the result of a lifetime of studying and supplying the needs of the finisher and cabinet maker.

NE ABORATORIES, Inc.

n Syracuse 4, N. Y.

Booklets Catalogs Circulars

Air Filter Bulletin

The application of replacable type air filters for ventilating and air-conditioning systems is explained in an 8-page booklet issued by American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky. Descriptions and illustrations of each type filter are given, along with instructions for maintenance and detailed engineering and installation data.

Concrete Repairing and Painting

A 50-page illustrated book covering the repair and maintenance painting of concrete floors, walls and roofs has been published by Stonhard Co., 401 N. Broad St., Philadelphia 8, Penna. It is titled, "Over the Rough Spots," and is free.

Adhesives Bulletin

A 4-page illustrated bulletin, "Adhesive Facts," contains information about adhesives for a variety of materials. It is published by B. B. Chemical Co., 784 Memorial Drive, Cambridge, Mass.

Materials Handling Book

How to achieve complete co-ordination of all steps in materials handling at relatively low cost is fully described in a new book on "The Turner System of Materials Handling."

The book includes pages of illustrations showing scientifically engineered handling methods. Descriptive pages on the Turner System indicate how this method has saved up to 50% in labor cost, floor space and equipment cost for hundreds of concerns. Specially designed units for the most efficient operation of the system are also illustrated.

A copy of the new book will be sent free upon request to the Factory Service Company, 4615 North 21st St., Milwaukee 9, Wisc.

Finishing Equipment Bulletin

A new 16-page illustrated bulletin, printed in 2-colors, shows the complete Despatch line — conveyors and conveyorized setups for cleaning and rustproofing metal, spraying and flow coating, air conditioning, air heating, and oven drying coatings on metal, etc.

About 36 striking pictures of equipment in operation in various types of factories are included in the bulletin. Here's something attractive, informative and useful for present and future reference. For a free copy write Despatch Oven Co., Minneapolis 14, Minn.

Vinylite Resins Bulletin

Two interesting and informative 4-page bulletins—Technical Releases, Nos. 1 and 2—about coating and adhesive materials formulated with Vinylite resin can be obtained free by writing Bakelite Corp. (Unit of Union Carbide and Carbon Corp.) 30 E. 42nd. St., New York 17, N. Y.

Tack Rag Calatog Sheets

Baughn Chemical Products Co., 7025 N. Ravenswood Ave., Chicago 26, Ill., processors of the nationally distributed "Crystal Tack-Rags" has made available to distributors and jobbers a sales aid in the form of a new 2-color catalog sheet setting forth the important features of the product. The catalog sheets are punched to fit every type of catalog and counter book. Lower prices are listed.

Electrostatic Spraying and Detearing Book Free

Electrostatic painting methods which have enabled manufacturers to reduce paint and labor costs by 40% to 60% are described in a new 16-page book prepared by the Harper J. Ransburg Co., 1234 Barth Ave., Indianapolis 7, Ind.

The book includes illustrations of more than 25 typical electrostatic spray installations in as many industries with brief case histories on many of them. A variety of electrostatic detearing operations also are pictured.

One section of the book explains the

principles of electrostatic spray and how the electrostatic coating zone creates a "wrap-around" and causes an even flow of atomized paint particles to all exposed exterior contours of the product being painted.

Various sections contain valuable information for paint superintendents, chemists, production engineers and top management in the consideration of their coating problems. Send for a copy.

About Mounted Wheels on Portable Grinders

Practical methods for increasing production, improving workmanship and reducing costs with light portable grinding equipment are described in "Mounted Wheels," the new 32-page illustrated handbook just published by The Carborundum Co., Niagara Falls, N. Y.

Preparation of Aluminum for Painting

A special, phosphate-type conditioning treatment for cleaning and preparing aluminum surfaces for painting is described in a 4-page Service Report issued by Oakite Products, Inc., 32F Thames St., New York 6.

The Service Report gives full details about this phosphating treatment, as provided by Oakite Compound No. 36, a mildly acid material which: 1) removes light oils, grease and shop dirt from aluminum and its alloys; 2) mildly etches aluminum surfaces and forms a thin, inert, adherent phosphate film which leaves surfaces in excellent condition for improved adhesion of paint, lacquer or enamel coats; and 3) retards corrosion of the metal under the paint coats, should they become accidentally scratched or damaged.

Oakite Compound No. 36 may be applied by metal washing, still tank or hand wiping methods, depending upon the size and shape of the aluminum parts, the volume of production required, and the equipment available.

High Solids Vinyl Resin Data Folder

Complete technical data on The Watson-Standard Co.'s series of high-solids vinyl resins technical coatings for cans, closures, containers, toys and a variety of other materials is available in a Technical Data Folder published by the manufacturer.

Each coating in the series is listed separately, with complete information. Data sheets cover code numbers, suggested uses, type of coating, physical constants, applicable surfaces, application methods, reduction recommendations, suggested film thicknesses, drying schedules and other information.

Watson-Standard's high solids vinylite finishes are ideal for materials which must be coated before fabrication and which require gloss, depth and beauty in the coating. The coatings are prescription compounded to individual requirements and are available in colors or water-clear.

For complete information write for the Technical Data Folder on High Solids Vinylites, The Watson-Standard Co., 225 Galveston Ave., Pittsburgh, Penna.

Factory Planning and Layout

Clean, convenient, and safe surroundings for employes can often be as important to the over-all efficiency of a plant as finding the correct spot for production equipment.

This fact governed the approach to the latest management study conducted by the Policyholders Service Bureau, Metropolitan Life Insurance Company. Results of the study have just been published in a report, "Factory Planning and Layout."

Designed to assist executives of Metropolitan Group-insured companies in planning towards the best possible results in operating efficiency and good working conditions, the report is written from an industrial relations rather than an engineering viewpoint. The methods suggested can be used in studying minor re-arrangements within an existing plant in order to improve working conditions as well as planning the layout of a new plant to provide a good place to work.

There is a limited supply of the report. Copies are available to executives who request them on their business stationery. Address: Policyholders Service Bureau, Metropolitan Life Insurance Company, One Madison Avenue, New York 10, N. Y.

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for the TRADE
By an Old Established Well Known Organization
Any type of stencil screen including fine photographic, made to your sketch, blueprint or specifications.
For the printing or decorating of radio dials, indicators, charts, name plates, metal specialties, toys, games, advertising display, novelties, glass and plastic specialties, furniture, textiles, etc. with lacquers, flat oil colors, enamels, dyes and ceramic.
Prairie State Products Co.
1631 S. Mich. Ave., Chicago 16, Ill.

Interchemical Corp. Accents Technical Sales Training

Producers of industrial finishes recognize that the highly technical nature of modern finishes and their application demands much more than mere sales contact between buyer and seller. What is needed today is a combination sales and technical service man who can solve 90% of his customer's application problems on the spot. To fill this need some manufacturers are developing comprehensive training programs similar to the plan adopted by Interchemical Corp. Finishes Division in its Cincinnati, Ohio, plant. This company's postwar program was instituted January 1, 1946, and is clearly returning big dividends in better field representation.

Prospective sales representatives of Interchemical are recruited from chemical and chemical engineering graduates of leading colleges and universities throughout the country. These graduates are then screened by psychological tests to select those whose personalities and abilities are best suited to the selling profession. Once accepted by the company, the neophytes immediately begin their training with a 2-week period in the Maintenance Department of the Cincinnati plant.

This initial assignment is then followed by 23 other periods of training varying from one to three weeks each, under the direct supervision of specialists or department heads. Supplementing the practical experience of actual participation in manufacturing, research and service is a series of 52 weekly lectures on chemical theory, sales psychology, selling methods, distribution and field service.

Interchemical extends its supervision of the new sales representative during his first year in the field. If necessary he may return to headquarters at any time for additional information on new products or methods. This policy of extended guidance not only builds self-confidence in a freshman sales force but also develops uniformly good performance patterns. Graduates of the training course are invited to criticize the program and their suggestions have resulted in many improvements in the original curriculum.

A higher standard of customer service is the ultimate aim of all such training programs. From this improved service will come greater efficiency and economy to the users of industrial finishes.

Century FLOCK GUN

A balanced, full three-way control gun for application of flock and all dry decorative materials, which can be applied to adhesive surfaces. Approved by leading car manufacturers for their own refurbishing programs. Full half-gallon container and instruction sheet packed with each gun.

Price, $24.50 each; immediate delivery

CENTURY PRODUCTS COMPANY

8535 Mt. Elliot Avenue Detroit 11, Michigan

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★ You have no regrets when you use NAZ-DAR QUALITY Silk Screen materials and supplies.

For a quarter of a century we have been headquarters for everything connected with the Silk Screen industry, building up an enviable reputation for fine quality merchandise and reliable service.

We make the famous YELLOW LABEL and BLUE LABEL Process Colors, WEATHERPROOF Silk Screen Enamel, Silk Screen Lacquer and many other products. Our line includes Decalcomania Paper, Frames, Squeegees, Cutters, etc.

For speedy, low cost printing, use NAZ-DAR Photographic or Hand Cut Plates.

★ *Write Dept. IF9 for information or copy of our new catalog No. 24.*

Naz-dar Company

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SUNBRITE MFG. CO.

Formerly the Mitchell-Mayer Co.

BRONZE PASTES
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ALUMINUM PAINTS
GOLD POWDERS
CHROME-TYPE ALUMINUM PAINT

3506 MARKET ST.
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Industrial FINISHING

Distributed Monthly to finishing room and paint shop foremen, production superintendents and company officials of metal-working, woodworking and miscellaneous industrial plants where production cleaning and finishing are major operations in parts and products manufacture.

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(No subscription solicitors are employed)

Editorial

Big Surprise at Big Plant

A man who gets around to all kinds of factories was delegated to visit one of the plants of a nationally-known firm—well fixed financially. He was eager to go, as he anticipated an opportunity to see the last word in point of equipment, arrangement, methods and general efficiency.

To say that he was disappointed at what he saw is an understatement. He wiped his spectacles, closed his eyes a minute to make sure he wasn't dreaming, and then looked again. Yes, there it was, for sure. Some of the buildings were old and some were new, but disorder and confusion prevailed everywhere. The factory office presented an array of junk. In the supply and repair room, tools were scattered all over the place—along with scrap material, product parts, painting apparatus, old paint containers and hose.

An expensive product cleaning set-up wasn't being used properly; there were big spray booths with inadequate exhaust; unclean air; floors sticky and lumpy; lack of balance and timing in production operations; employees unclean and low in morale.

An unpleasant experience and a distasteful thing to even mention—except as a lesson to the heads of other concerns—all other concerns, from the smallest to the largest. Whether a firm's buildings are new or old—and regardless of their locality—it is essential, first of all, to have organization, safety and cleanliness, especially in the painting or finishing department. Equipment, even if it isn't the latest, needs to be kept clean and in first-class working condition.

Replacement parts should be on hand for everything likely to need replacement—this to assure continuous operation. There must be system to any production layout so that successive operations follow in natural sequence. The volume of work turned out at one station should balance what can be easily handled at the next station, and so on all along the line. There

should be no bottlenecks or congestion at one or more points which will cause employees elsewhere to loaf along waiting for work.

Conveyors and all material-handling apparatus should fit the job and do the job without damage to work in process, and without endangering workers or others in the vicinity.

Spray booths—even old ones—should be built or rebuilt and equipped to remove all overspray and paint fumes effectively. Clean air is as necessary in the painting room as it is in the firm's executive offices.

Where conditions exist that are even half as bad as those cited here, someone in a key position has failed to do a needed selling job somewhere. Someone in authority in the place perhaps doesn't know any better. He should be enlightened. The money being being wasted, as a result of conditions existing there now, and the money that could be saved if those conditions were corrected — this would go a long way toward paying for a complete change-over to what one would expect to find in a well managed progressive plant, set up to operate on a profitable basis in the face of high costs for materials and labor.

More Paint Used And More Needed

Tremendous quantities of paint, varnish, lacquer and enamel are being used as protective and decorative coatings. Nearly all manufactured products require paint coatings of some kind—and most of these items are being turned out now in large quantities.

Plant reconversion to peacetime pursuits has resulted in major al-

SEND $1.25 FOR ONE MARTINDALE PROTECTIVE MASK and 50 No. 1 Refills

or $1.50 if you prefer No. 2 Refills

Weigh Less Than ½ oz.

PLACE HEAD-BAND WELL UP AROUND HEAD TO KEEP FROM SLIPPING DOWN
PRESS NOSE TABS IN CLOSE AGAINST FACE TO HOLD PAD AGAINST THE NOSTRILS
PRESS EDGES OF FACE PLATE DOWN TO FIT FACE SNUGLY

Not Recommended for Toxic Dusts or Free Silica

Protect your nose and throat from dust, powder and spray from non-toxic enamels and paints. Dust may carry dangerous germs.

List Prices—F.O.B. Cleveland

Masks ..... $0.25 each
No. 1 Refills (std. weight) ..... .02 each
No. 2 Refills (heavyweight) ..... .02½ each

Masks packed in individual envelopes. Refills packed in envelopes of 25.

The No. 2 Refills contain twice as much filtering cotton as the No. 1.

Write for Bulletin 352 showing quantity discounts on orders of $5.00 and over

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terations in many factories—old and new—with attendant interior and exterior painting operations required.

Hotels, office buildings and shops, too busy to attend to regular painting schedules during the war years, and with insufficient help to do so, are turning to the problem now, with further drain on the paint industry's productive capacity.

Property owners are doing what they can to conserve present holdings through paint protection. Warehousing of the largest crops the nation has ever produced has made the American farmer mindful of paint protection, with a substantial increase in paint sales in that category.

After every great war the public tries to forget through the use of color, turning from drabness to gay colorful homes. Paint used for purely decorative purposes is consumed in almost fabulous quantities.

Add to all this the greatest building boom in history, plus substantial demands for export, and the paint industry finds itself hard pressed to meet requirements.

Several concerns in the paint, varnish and lacquer industry have increased or are increasing their capacity to produce more goods, but these increases still seem to be insufficient to take care of the present and probable future demands for real quality materials.

Heat From Hot Water Coils in Floor

In a radiant-heated structure, warmth is distributed uniformly over all areas regardless of size. The main physical difference between radiant and other types of heating systems is that radiant

systems utilize large low-temperature heating surfaces, generally the floors, while conventional systems use small, high temperature surfaces and rely on movement of air currents for distribution of heat. With a minimum of convection currents in radiant heat, dust particles and other small pieces of material are permitted to settle on the floor instead of being blown around the room. This is particularly advantageous in many types of factories and particularly in finishing rooms.

One new plant in Minneapolis, Minn., has nine miles of wrought iron pipe, ranging in size from 5-in. to 1¼-in. The pipes, welded together in the form of grids for the manufacturing, warehouse and garage areas, and fabricated as sinuous coils for the second floor areas, are buried in the concrete floors. This is the practice in nearly all radiant heating installations.

Hot water for the radiant heating system is furnished from an oil-fired boiler with a rated capacity of 7,286,000-Btu. Heat losses for the entire building were calculated at 3,695,000-Btu.

The building was divided into seven heating zones, each zone receiving its hot water supply from separate mains. Individual circulators are used for each zone. The radiant heating system is controlled by means of a combination indoor-outdoor thermostat arrangement.

In the manufacturing warehouse and garage areas, the radiant heating pipes are embedded in 6-in. of concrete, positioned on a 6-in. gravel fill. Second floor pipe coils are in the reinforced concrete structural floor slab which is topped with asphalt tile finish flooring. As in 90% of radiant heating systems now operating in

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this country, wrought iron pipe was specified for the installation because it is resistant to corrosion, expands at about the same rate as concrete, and is easily bent and welded into radiant heating coils.

Checking Ahead for Winter Activity

★ The final quarter of the business year is near at hand. Business during this quarter is expected to increase in volume, not only because of Christmas needs but because of the beginning of the cooler and colder weather. With a revived interest caused by cool weather, the demand for durable products should reach new highs.

New highs in purchasing power mean increased use of finishing materials, equipment and manpower. Industrial management should give attention to these increased uses. Material should be ordered for delivery prior to freezing "bad delivery weather," using judgment and past experience as to quantities and delivery dates, and giving paint manufacturers time to formulate and make the products in an orderly manner. Parts for replacement of worn, old or inefficient equipment such as spray guns, hose, hose connections, gaskets for pressure tanks, etc., should be ordered now so as to assure delivery.

The outsides of spray booths

★ Guest Editorial . . . Many readers can write an excellent editorial — two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those that are published.

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can be given a coat or two of good paint so they will have a neat businesslike appearance. All fan belts, motor bearings and lubrication should be rechecked to make sure there will be no failure.

The source of compressed air should be checked to note whether water has accumulated in the compressor; and the air lines should be checked for air leaks. Air line water traps, and oil and water traps at the spray ends of the air line should be cleaned and new moisture-catching fillers should be inserted to assure clean dry air for spraying.

Accumulated drippings on the floor from paint drums, and accumulations adhering to the floor in or near paint mixing rooms should be removed.

Dip tanks and other places where static electricity may be waiting to spark and cause damage should be grounded; or present grounding wires should be rechecked for corrosion or breaks, and corrections made.

Conveyor ovens and drying rooms should be checked for proper exhaust of dangerous accumulations of fumes.

Forethought in checking and taking care of the above mentioned cases will greatly assist in promoting more production at a high rate of efficiency, just at the time when it will be most needed.—N. ABRAMOVICE.

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"Call for Quality" Brings a Challenge!

★ With prices of durable goods at such a high level today the average purchaser confidently expects to get maximum utility with a minimum of maintenance and servicing expense—and this is where finishers come into the picture.

Today—our third year after V-J Day—all of those "bigger and better" values resulting from wartime research are still not widely available at prices everyone can afford to pay. True, manufacturers have made much of mech-

anical innovations and engineering refinements. And they are hacking away at costs by increasing productivity. But some producers, in their efforts to cut corners, have done little or nothing, in the way of improving their finishes.

When a customer buys a refrigerator, washing machine, or any other major domestic appliance, he invariably "looks 'em all over" and selects the one he believes is the greatest value for his money. One of the first qualities he wants is an attractive, durable finish.

The general public cannot tell how durable or wear-resistant the finish on a new product will be, just by looking at it. However, the dollar-wise and cost-conscious consumer, having become increasingly value-minded, is now looking for some practical yardstick by which he can predetermine the serviceability of the merchandise he buys. Here is today's "golden opportunity" for product finishers.

There is no foolproof all-inclusive rating system by which the merits of industrial coatings can be judged, of course, but considerable progress has been made in recent years when it comes to scientifically gauging and accurately evaluating finish performance characteristics. One pioneer producer of production-finishing materials, for example, has developed a number of special devices which make possible a "cycle-testing" system that simplifies analyses of paint, lacquer and enamel coatings from the standpoints of exposure-resistance, adhesion, hardness and elasticity.

Producers of industrial coatings today have an important educational job clearly staked out for them. It is a task that offers them new opportunities to serve both industry and the consuming public. The finishing materials supplier who continues to pioneer will be the first to sell his customers on the necessity of promoting, as part of their merchandising program, the application of quality coatings to their own products.—S.A.L.

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